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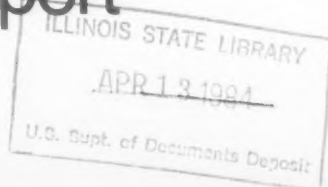
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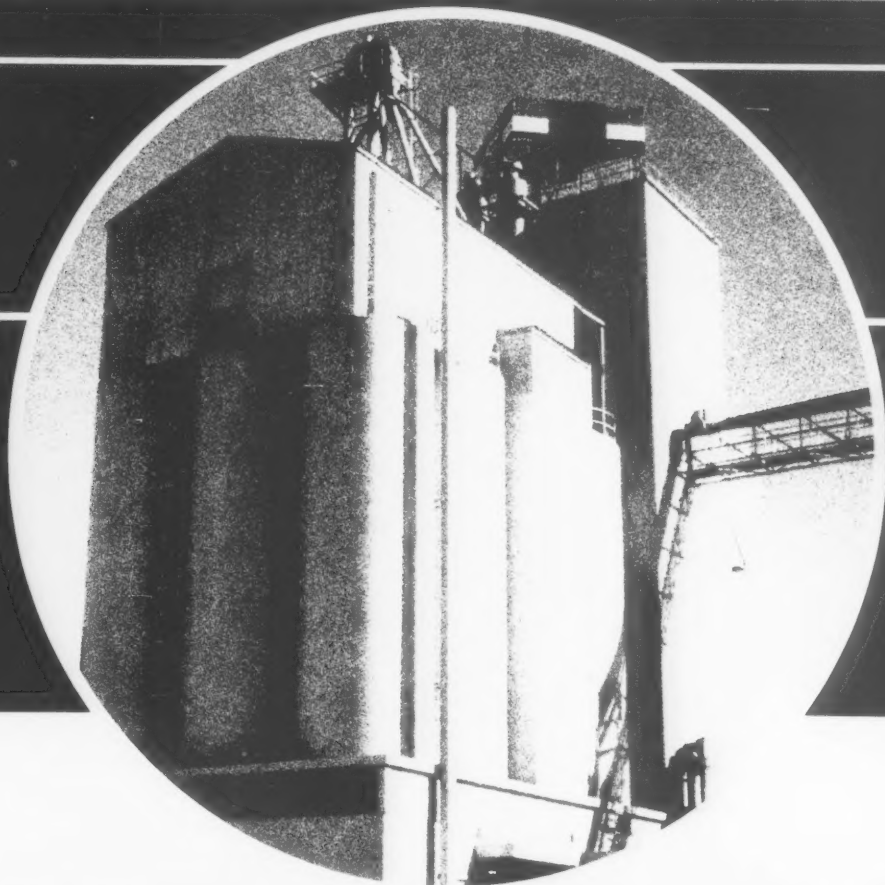
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March 1984

Feed

Outlook and Situation Report



Corn supply lowest since 1976, p. 2



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Summary

Corn stocks on January 1 were estimated at 4.9 billion bushels—the available supply until the new harvest. Last year, 5.1 billion bushels were used during January–September. Exports for the first 9 months of 1984 are expected to be slightly less than a year earlier, but they will be more than offset by an increase in food, seed, and industrial (FSI) use. Therefore, feed and residual use will have to make the adjustment in order to ration overall use in light of dwindling supplies. Livestock feeding is expected to equal or exceed a year earlier during the first half of the feeding year, and then drop below during the second half. But developments in the livestock sector, if they continue, could temper the decline in feed requirements.

Since last September, livestock prices have risen and corn prices have decreased, thus improving returns to feeders. The steer/corn price ratio at Omaha rose from 17.8 last September to 22 in late January. Compared with a year earlier, placements of cattle on feed in the seven monthly reporting States were down 5 percent in October and 4 percent in November, but rose 13 percent in December and 5 percent in January. Similarly, the hog/corn price ratio at Omaha rose from 13.7 to 16.1. The price for U.S. No. 1-2, 40-50 pound, feeder pigs in southern Missouri rose from \$23.62 per head last September to \$37.31 in January, reflecting an increase in demand. Therefore, potentially more cattle on feed, a less-than-expected drop in farrowings during late spring and early summer, and low participation in the dairy reduction program all could increase feed requirements during April–September over earlier expectations.

Part of the adjustment in corn feed use will come from greater use of other grains. Near-record amounts of wheat are being fed this year because wheat has been priced low relative to corn and sorghum in many areas. Particularly, wheat has replaced corn and sorghum in cattle feeding in the Central and Southern Plains. If prospects for a large 1984 wheat crop hold, wheat feeding during June–September will exceed the 284 million bushels fed a year earlier.

Corn prices this spring will have to rise to retrigger the release of the farmer-owned reserve. As of early February, there were nearly 700 million bushels of uncommitted corn in reserves IV and V, most of which were likely in reserve V. The release status of both reserves was canceled February 1, because the 5-day adjusted price for corn was below the trigger price at the end of January. The trigger price for reserve IV is \$3.15 a bushel; reserve V is \$3.25.

This year's corn crop will be about 8 billion bushels, if farmers carry out intentions to plant 82 million acres and normal planting and growing conditions prevail. Eight billion bushels would be nearly double the 1983 crop, but would not be burdensome because beginning stocks will be very low. With larger supplies, the average farm price of corn in 1984/85 will likely average lower than this year, but would hold well above the \$2.55-a-bushel loan rate.

Hay supplies have been short and expensive this winter because of heavier feeding requirements forced by last summer's drought and January's freezing temperatures. Carryover stocks will likely be the lowest in 19 years, and hay prices will probably be record high this spring.

Increased production of fuel alcohol and high fructose corn syrup (HFCS) was the major reason for an 8-percent increase in FSI use of corn during October–December. Further growth in FSI use is promised by the decision of a major soft drink producer to increase the proportion of HFCS in its product. Therefore, if current rates of use continue, FSI use could exceed the current forecast of 950 million bushels.

The forecast for U.S. corn exports during 1983/84—1.9 billion bushels—was firmed by continued reduced prospects for the South African harvest, resulting from drought during the critical pollination period. South Africa's crop is now estimated at 6.5 million metric tons, down 3 million from the earlier forecast.

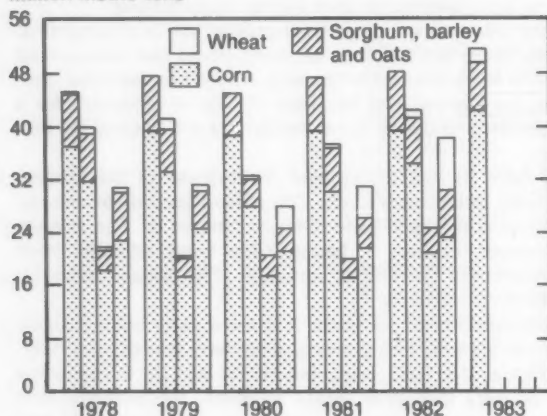
FEED GRAIN SUPPLY AND UTILIZATION

The beginning supply of feed grains for the 1983/84 feeding year (October-September) was 227.6 million metric tons, down 28 percent from the 316.2 million available a year ago. Carryover stocks on October 1, 1983, accounted for 48 percent of the total supply, and corn and sorghum harvests for the remaining 52 percent. Carryover stocks on October 1, 1982, represented 26 percent of the supply.

Grain available for feeding during the year will be supplemented by a greater supply of wheat and by the harvest of this year's barley and oat crops during June-September. The barley and oat harvests last year totaled 18.2 million tons—almost 3 percent above the 1971-1982 average of 17.7 million. An estimated 8.9 million tons of wheat were fed in 1982/83, of which about 1.2 million were fed during October-May and 7.7 million during June-September. For 1983/84, feed use of wheat is expected to be about 4.5 million tons for October-May, and it is also projected to exceed year-earlier use during June-September.

Quarterly Feed and Residual Disappearance¹

Million metric tons



¹October-September feed years. 3rd quarter includes only 2 months.

October-December Use a Record; January 1 Stocks Lowest in 7 Years

Disappearance of feed grains during October-December totaled 72.2 million tons—up 4 percent from the 69.2 million used a year ago and a record high for the first quarter. Exports—15.7 million tons—rose 0.8 million from a year earlier but were below the preceding 3 years. Food and industrial use, at 5.3 million tons, was also record high, but use by the beverage alcohol industry was down 0.2 million to 1.2 million tons. Feed and residual disappearance—a record 49.9 million tons—was up 1.8 million from a year ago.

October-December disappearance left 155.4 million tons of feed grains on hand January 1—the smallest stocks for this date since 1977. If this year's barley and oat

crops are about the same as last year, stocks next October 1 may be near 1980/81's 45.5 million tons. However, there will likely be much less corn, more sorghum, and about the same amount of barley and oats.

Corn

Supply Lowest Since 1976; Large Stocks Cushion Drought's Impact

The supply of corn last fall was 7.3 billion bushels—down 3.2 billion from a year earlier and the lowest since 1976, when 6.7 billion bushels were available. Of the total supply, carryover stocks of 3.1 billion bushels accounted for 42 percent and the 1983 crop of 4.2 billion made up the remainder.

The 1983 crop was about half the 8.4 billion bushels harvested in 1982. About half of the decrease resulted from a 29-percent drop in acreage harvested—from 73 million acres in 1982 to 51.5 million last year—primarily the outcome of the payment-in-kind (PIK) program. The other half of the decrease stemmed from a 29-percent drop in yield per acre, from 114.5 bushels in 1982 to 81.6—primarily because of the drought.

More of Carryover Stocks Available This Year

Carryover stocks of corn this past October totaled 3.1 billion bushels, a 44-percent increase from the 2.2 billion on hand a year earlier. However, the ownership pattern and degree of availability to the market were quite different. In 1982, 86 percent of the stocks were in private ownership, and 14 percent belonged to the Commodity Credit Corporation (CCC), compared with 63 and 37 percent, respectively, in 1983.

Out of the nearly 1.9 billion bushels in private hands in October 1982, more than 1.3 billion were in the farmer-owned reserve (FOR), 368 million were under regular loan, and only 185 million were free of any commitment. The farm price during fall 1982 averaged \$2.12 a bushel, well under the trigger price of \$3.15 a bushel for the reserve IV and the redemption price of about \$2.60-\$2.65 for the 1981-crop corn under regular loan. Therefore, only 209 million of the 2.2-billion-ton carryover were available to the market at prices then prevailing.

Corn stocks on January 1

Item	1983	1984
Million bushels		
Total stocks	8,284	4,929
CCC inventory	429	1,225
Private	7,855	3,704
FOR	2,050	1,295
Under loan	350	155
Other	5,455	2,254

¹Preliminary.

About 29 percent of the base of 81.3 million acres in 1982 was in compliance with the farm program and eligible for regular or FOR loans. Thus, production from

about 71 percent of the base, about 5.9 billion bushels, had no alternative other than the market. From October 1, 1982, to April 1, 1983, 1.5 billion bushels, about 60 percent of the eligible 1982-crop corn, were placed under loan, of which 1.3 billion went directly into the FOR. In April, the farm price exceeded the FOR loan rate, thus removing most of the incentive to place additional 1982 corn under loan.

Corn stocks on April 1, 1983, amounted to 6.2 billion bushels, but about 3.2 billion were in the FOR and CCC inventories and, therefore, not readily marketable. Of the remaining 3 billion bushels, 250 million were under regular loan, with about 75 to 100 million pledged for PIK payments. Consequently, less than 3 billion bushels of the stocks on April 1 were available to the market, unless the price increased to the trigger level of \$3.15 a bushel to free reserve IV corn. Thus, continued tight supplies and the decreased willingness of farmers to sell as the drought developed in July drove corn prices up, and reserve IV was released July 15 and reserve V on July 26.

Stocks on October 1, 1983, exceeded 3.1 billion bushels, with almost 1.2 billion in the CCC inventory and 1.9 billion in private hands. However, 800 to 850 million bushels of privately owned stocks were pledged for PIK payments and undelivered bids by farmers in the PIK acquisition program. With both reserves triggered, this still left about 1.2 billion bushels of carryover stocks available to the market, compared with 261 million a year earlier. This would help to explain why corn prices during October-December averaged lower than had been anticipated.

January 1 Stocks Lowest in 7 Years

Stocks of corn in all positions on January 1 were estimated at 4.9 billion bushels, down 41 percent from a year earlier and the lowest for that date since 1977. On-farm stocks totaled 3.1 billion bushels, a little more than half of the previous year's 6 billion bushels. Off-farm stocks amounted to 1.8 billion bushels, a 19-percent decline from the 2.3 billion a year earlier.

Almost 1.2 billion bushels of this year's farm stocks were under loan (FOR and regular), and off-farm stocks included 266 million bushels under loan. Thus, over 1.4 billion bushels of stocks on January 1 were under loan, of which about 650 million were still pledged for PIK payments and about 100 million bushels were new-crop corn under regular loans. The remaining 725 million bushels were 1981 and 1982 corn, largely in reserve loans and available to the market only when the reserves have been triggered.

Off-farm stocks, excluding corn under loan, amounted to 1.6 billion bushels on January 1, but about 1.1 billion of this was CCC owned, leaving about 450 million bushels in commercially owned stocks. Last year, off-farm stocks of 2.3 billion bushels included 1 billion in loan and CCC grain, leaving about 1.2 billion in commercial ownership. Thus, the market has been operating on a hand-to-mouth basis this year compared with last year.

October-December Use a Record

The 7.3-billion-bushel supply of corn during October-December, less January 1 stocks of 4.9 billion, places

disappearance at 2.4 billion for the quarter—about 140 million more than a year earlier and a record high for a single quarter. Exports amounted to 529 million bushels, an increase of 3 percent from a year earlier. Exports of corn as grain were up about 17 million bushels, but shipments of processed products were down slightly.

Exports are running slightly ahead of the pace needed to meet projected shipments for the crop year (1.9 billion bushels). For January-September, inspections will need to average about 34.5 million bushels a week, compared with 40.3 million this past October-December. The inspection rate for January averaged 35.8 million bushels a week.

Upward Trend Continues in FSI Use

Food, seed, and industrial use during October-December was 220 million bushels, an increase of more than 8 percent from a year earlier. This gain results from continued expansion in the markets for high fructose corn syrup (HFCS) and ethanol as a gasoline additive. Use of both of these products will increase seasonally in the late spring and summer, as consumption of soft drinks and highway travel pick up. Last year, the daily rate of use of corn in food and industrial processing rose from 1.9 million bushels a day during October-December to 2.7 million during the following June-September—a 42-percent increase compared with a year-over-year gain of 9 percent for the entire 1982/83 crop year. The beverage alcohol industry purchased almost 20 million bushels of corn during October-December, about 30 percent less than a year ago, but the second highest use on record for October-December.

An important soft drink company recently announced that HFCS may now account for 75 percent of the total sweeteners used in its canned and bottled soft drinks, compared with 50 percent in the past. This action will increase the use of corn by the wet-milling industry.

Feed and Residual Use Also a Record

The October-December total disappearance of 2.4 billion bushels, less 220 million FSI use and 529 million exports, leaves almost 1.7 billion bushels for feed and residual use. This is an increase of 8 percent from a year earlier and a record for October-December. The inventory of livestock and poultry consuming grain during October-December, weighted for relative rates of feed consumption per class, was up about 1 percent from a year earlier. Thus, the increase in feed use is consistent with the direction of change in livestock and poultry numbers, but the magnitude is greater than would be expected from the livestock numbers.

Tight Supply Implies Higher Prices

Last year, total disappearance during January-March exceeded 2 billion bushels. This year, combined exports and FSI use are expected to be about 700 million bushels, up about 3 percent from the 677 million a year earlier. Weighted livestock and poultry numbers for January-March are down about 1 percent from a year earlier, but the colder weather in January may have increased feed use about 2 percent. Therefore, total use for the quarter may be between 1.9 and 2.1 billion bushels, which would

leave 2.8 to 3 billion bushels in stock on April 1. This would be less than total use during April-September last year of 3.1 billion bushels.

Total use is forecast at 6.8 billion bushels for 1983/84. Ending stocks are placed at 545 million, of which 225 million would be in FOR and CCC inventories and 320 million free. The weighted season-average price received by farmers would be between \$3.20 and \$3.40 a bushel, implying a significant increase in the price of corn for the balance of this year. The farm price during October-January averaged \$3.15 a bushel, and these months generally account for over 40 percent of the sales for the crop year.

If 4.4 billion bushels of corn are used by April 1, as now appears likely, use for April-September could only total 2.4 billion bushels to make the forecast use of 6.8 billion bushels. This would require a 23-percent decline from year earlier. A drop of this magnitude would require a much larger price increase than implied by the forecast range. Unless the price rises to sharply ration use of the dwindling stocks, the carryover likely would turn out much lower than now forecast.

On January 4, the FOR plus outstanding regular loans from 1981 and 1982 crops amounted to slightly more than 1.3 billion bushels. About 650 million were pledged for PIK payments, leaving about 725 million as uncommitted reserves. By the end of January, outstanding regular loans (including 1983-crop corn) and the FOR declined to about 1.2 billion, with uncommitted reserves still near 650 million bushels. On February 2, the USDA announced that release status had ended for both reserves IV and V. Consequently, these stocks cannot be redeemed for sale until the 5-day average adjusted price reaches the trigger level of \$3.15 a bushel for reserve IV and \$3.25 for reserve V. At the end of January, reserve IV contained about 428 million bushels, and reserve V about 779 million, but most of reserve IV likely was pledged for PIK payments. Therefore, reserve V will have to be triggered in order to cause a significant increase in the amount of marketable reserve corn.

In addition to corn in the reserve, CCC stocks will likely contain about 175 million bushels after all PIK entitlements have been met. However, the national average price received by farmers would have to be about \$3.87 a bushel before the CCC could sell corn.

Livestock Feed Indicators Changing

Feed use of corn will have to drop below year-earlier disappearance during the latter part of this year. Aggregate livestock and poultry numbers will show little change from a year earlier until June-September. But the outlook is beginning to change even for then. Returns to cattle feeders improved during the fall; consequently, placements on feed in the seven monthly reporting States rose 13 percent in December and 5 percent in January. If feed grain prices remain where they have been the past couple of months, placements on feed the first quarter may exceed year-earlier placements by more than the 2.7 percent built into the current forecast. This would modify the projected drop in livestock feeding during June-September. Similarly, hog producers may have modified breeding plans, so farrowings in the late spring

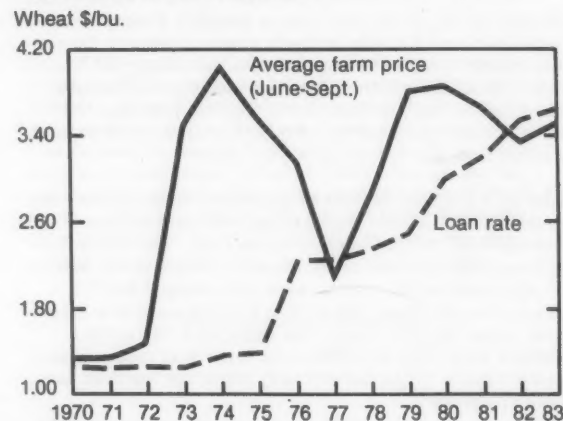
and early summer may not be down as much as anticipated earlier. This too would alter the decline in feed use expected during June-September.

The current outlook is for free corn stocks to become very tight by spring. Through the spring and summer, the market will need to pull corn out of reserve V. The extent of the price increase will depend on the amount of corn on hand April 1, the outcome of the harvest in the Southern Hemisphere, and the extent to which short-run supply reacts to these factors.

New-crop wheat will become available in southern regions in June and in the central regions in July. This will ease the feed grain situation somewhat, and the quantity of wheat fed during June-September likely will exceed the 284 million bushels fed a year earlier. However, the national average loan rate for 1984 wheat, \$3.30 a bushel, will act somewhat as a floor to cash corn prices until the corn harvest gets underway in mid-to late September.

The average farm price for all wheat during June-September has dipped below the national average loan rate in only 3 of the last 14 years, namely 1977, 1982, and 1983. The margin between the average farm price and loan rate was 16 cents a bushel in 1973, 21 cents in 1982, and 12 cents last year. In 1982, when wheat prices sagged the most relative to the loan rate, adequate supplies of corn and sorghum were available.

Only in 3 Years Since 1970 Have Wheat Prices Dipped Below the Loan Rate



Wheat prices will likely react more like they did in 1983 than in 1982. Wheat likely will have to be transported to distant areas to be used in lieu of corn in some feeding areas. The feed lot cost of wheat in these areas will be price plus transportation and handling costs. Consequently, wheat prices will be an important factor affecting the price of corn until this year's harvest approaches peak activity.

1984 Crop Likely To Ease Supply

Although carryover stocks are expected to be the lowest in 8 years, the supply of corn likely will be adequate after this year's harvest is completed. Participation in the feed grain program will have some impact on the size of the crop, but planting and growing conditions will be the major determinants.

Participation in the program this year requires a grower to put 10 percent of the farm base in soil conservation use. More acres were certified this year than last, so the total corn base may now be close to 84 to 85 million acres. Thus, each 10-percent increase in participation will raise the conservation use acreage about 850,000 acres. Based on reported intentions of farmers to plant 81.8 million acres to corn, participation may be about 40 to 50 percent this year. Enrollment will not be known until after the signup period, which has been extended to March 16. Silage, forage, and acreage abandonment are expected to account for about 9.3 million acres, leaving a harvested area of about 72.5 million. If planting and growing conditions are normal, the trend yield would be about 111 bushels an acre, resulting in a harvest of about 8 billion bushels.

With extremely small carryover stocks, a crop of this size would provide an adequate but not burdensome supply, and farm prices would average lower in 1984/85 than this year but would hold well above the loan rate. Use in 1984/85 will increase from this year's disappearance, but livestock and poultry numbers could not respond to the lower prices in time to push total disappearance beyond 7.2 to 7.3 billion bushels. Carryover stocks in 1985 would be back to 1.1-1.4 billion bushels—a comfortable level but becoming burdensome if stocks increased a like amount in 1985/86.

One event that could result in a drastic change from the scenario presented above would be another drought. If yields were severely reduced by drought this year, even with the larger plantings, production would fall short of use, and prices would rise substantially. However, the probability of this is small. The closest we have come to two consecutive droughts were 1934 and 1936—both severe.

Sorghum

The supply of sorghum this year came to 882 million bushels, a decrease of 22 percent from the previous season's 1.1 billion. Carryin stocks amounted to 399 million bushels, 34 percent above a year earlier, but production, at 483 million bushels, was 43 percent less than 1982's 841 million.

Acreage harvested in 1983 was down 31 percent from 1982—primarily the result of PIK. The yield was down 17 percent, reflecting the impact of the drought. The drought had less impact on sorghum yields than on corn yields for two reasons. First, significant shares of the sorghum crop come from the Rio Grande and Coastal Bend areas of Texas, where the crop was largely harvested before the drought became serious. Second, hybrid varieties of sorghum have greater drought and heat tolerance than corn.

October-December Use Down

Stocks in all positions were 651 million bushels on January 1, down 160 million from a year earlier. Unlike corn stocks, most of the sorghum stocks were off the farm (503 million bushels or 77 percent of the total), and these are concentrated in Nebraska, Kansas, and Texas.

Subtracting January 1 stocks from the total supply shows that total use during October-December was 232 million bushels, a 29-percent drop from the 328 million bushels a year earlier. Exports amounted to 62.1 million bushels, compared with 67 million during October-December 1982. Food, seed, and industrial use, 2.3 million bushels, was virtually the same as during October-September a year earlier.

Feed and residual use was 167.1 million bushels, 35 percent (91 million bushels) below the 258.1 million used a year earlier. The decrease in feed use resulted from two factors. First, a large part of the supply was isolated from the market in the FOR and CCC inventories. Second, wheat prices were competitive with sorghum in the Southern Plains, and this caused wheat to replace a significant amount of sorghum in cattle feeding.

Virtually the entire carryover of sorghum was tied up in loans and CCC inventory. Reserve IV sorghum was triggered in early August, but the farm price fell below the trigger level again in October, so the release status ended November 1. About 35 million bushels were redeemed while reserve IV was in release status. An additional 24 million bushels were returned to the market by the end of December in the form of PIK entitlement grain. Over 400 million bushels of January 1 stocks were accounted for by the FOR and CCC inventory.

Sorghum stocks on January 1

Item	1983	1984
Million bushels		
Total stocks	811	651
CCC inventory	47	190
Private	764	461
FOR	383	245
Under loan	19	9
Other	362	207

¹Preliminary.

In the High Plains region of Texas, the local elevator price for No. 2 Hard Red Winter wheat averaged \$3.33 a bushel during October-December, compared with \$2.92 for sorghum. Adjusting for the difference in weight per bushel and relative feeding value in fattening cattle, a price of \$3.57 a bushel for wheat would have represented equivalent value to sorghum's \$2.92. Consequently, wheat was underpriced relative to sorghum.

Wheat will continue to replace sorghum in cattle feeding in the Southern Plains as long as it is a better buy. Consequently, cattle feeders' cost of wheat will have to rise and/or the price of sorghum fall in order for sorghum to

replace wheat. If local stocks of wheat become short and feeders have to go further to obtain wheat, the additional cost of transportation would drive up the cost of wheat. Furthermore, the price of sorghum may decrease as more PIK grain enters market channels during January-March. By late January, the price of sorghum had dropped to about \$2.82 a bushel in the High Plains, and the price of wheat increased to \$3.38. However, if the adjustment is in the form of lower sorghum prices, the amount of sorghum to be fed will be limited by free stocks, because there would be no possibility of triggering the FOR. However, the rise in corn prices expected this spring may pull sorghum prices up sufficiently to trigger sorghum reserves.

Use for the balance of the 1983/84 crop year is currently estimated at about 425 million bushels, which would leave a little over 220 million in carryover stocks. However, this outcome assumes that sorghum prices will rise sufficiently to permit some grain to be redeemed from the FOR.

The farm price for sorghum during October-December averaged \$2.78 a bushel. Higher prices for sorghum will depend primarily on the amount of seasonal strength generated in corn prices by a tightening supply. The farm price for corn would have to be about \$3.30 a bushel to trigger reserve IV and \$3.40 to trigger reserve V.

Barley

Total disappearance of barley for October-December was 139.3 million bushels, 64 percent above a year earlier and a record high for October-December. This brought total use for the first two quarters of the crop year (June-December) to 368.5 million bushels—also an alltime high.

FSI use during October-December was 36.9 million bushels, practically the same as a year earlier. Total exports for the year to date are 56.3 million bushels, a figure exceeded in only 2 years during 1960-1983.

Subtracting FSI and exports from a total disappearance of 139.3 million bushels leaves 69.5 million as feed and residual disappearance—the highest for October-December since 1960. Feed barley was generally favorably priced relative to corn and wheat.

Tight Supply for Remainder of Crop Year

Even though this crop year's beginning supply was 10 percent larger than in 1982/83, the high rate of use during the first 7 months left 378 million bushels on hand January 1, 1984—10 percent less than a year earlier. January 1 stocks included about 97 million bushels in the FOR and 11 million in the CCC inventory, leaving about 270 million available to the market.

In early February, the calculated 5-day average adjusted farm price, for feed barley only, was \$2.15 a bushel, compared with the FOR release price of \$2.55 for 1981-crop barley and \$2.65 for 1982's harvest. Only about one-fifth of the reserve is 1981-crop barley, so marketable supplies will not be increased significantly until the 1982 reserve is triggered. However, this release will require about a

Barley stocks on January 1

Item	1983	1984
Million bushels		
Total stocks	418	378
CCC inventory	5	11
Private	413	367
FOR	67	97
Under loan	34	27
Other	312	243

23-percent rise in barley prices, which is unlikely unless prices for other feed grains rise about a similar amount.

Use for January-May is expected to total about 246 million bushels, which would leave carryover stocks of 137 million bushels. However, most of the stocks would be isolated in the FOR and CCC inventories.

Barley prices have strengthened significantly through the marketing season. The average farm price hit a low of \$2.20 a bushel in July 1983. Since then, however, they have worked steadily upward to a mid-January price of \$2.64 a bushel. Prices are expected to average about \$2.50 for the season.

Oats

Total use of oats during October-December was 131.7 million bushels, 23.6 million more than a year earlier and the largest use for that quarter since 1974. FSI use and exports were down slightly from the corresponding period last year. Feed and residual use, at 119.2 million bushels, was up 24.1 million and also the largest for October-December since 1974. The large total disappearance for the quarter brought use for June-December to 345.6 million bushels, an increase of 47.7 million bushels from a year earlier.

Supply Tightening; Prices Strengthening

October-December use left 378.5 million bushels of oats in inventory on January 1. The bulk of the January 1 inventory, 85 percent, was in on-farm storage, with 74 percent of the supply in the five major producing States. These five States—South Dakota, Minnesota, North Dakota, Wisconsin, and Iowa—harvested 63 percent of the U.S. oat crop in 1983. About 6 million bushels of the January 1 stocks were in reserve and CCC inventories. However, the oat reserve was triggered last August, so the 4.8 million bushels in the reserve are available to the market and only the CCC inventory of 1.1 million is isolated.

Last summer, oats were priced particularly low relative to corn, based on both historical price relationships and relative feeding values. The farm price for oats averaged \$1.49 a bushel during June-September 1983, compared with the average farm price for corn of \$3.21. Based on the relative feeding value of oats, the price of oats could have been near \$1.65 a bushel. Based on the historical relationship between oat and corn prices during the oat crop year (June-May), the price could have been about \$1.87 a bushel. Consequently, oats were a bargain relative to corn.

From June-September to January, the average farm price of corn dropped to about \$3.15 a bushel, and the price of oats increased to about \$1.76. At these prices, oats are not the bargain they were last summer.

Total use of oats for January-May is expected to total about 220 million bushels, which would leave June 1 carryover stocks of about 160 million bushels. This would represent a stocks-to-use ratio of 0.283, the lowest since 1970 and close to the 0.284 in 1982, when ending stocks of oats were a record-low 152 million bushels.

Imports Tapering Off

This is the first year since the mid-1950's that the United States has imported over 5 million bushels of oats within a crop year. Imports during June-December were 16.6 million bushels. However, 11.7 million bushels came during June-September, and 4.9 million during October-December. During June-September, the price of oats was at its seasonal low, and even though the dollar has strengthened and U.S. oat prices have increased since then, imports have dropped. Canada and Sweden were the major sources of imports, with a small amount coming from Colombia.

Hay

Supply Down Slightly

The hay supply for the 1983/84 crop year (May-April) was 171.7 million tons, about 3 percent less than the 177.6 million available for 1982/83. Larger carryover stocks only offset one-half the impact of drought. A total of 89.6 million roughage-consuming animal units (RCAU's) were on hand this year, compared with 90.4 million in 1982/83. Consequently, the per unit supply was down only 2 percent, from 1.96 tons in 1982/83 to 1.92 in 1983/84.

The drought's affect on ranges and pastures forced farmers to start feeding hay earlier than usual in some areas. Total use during May-December was up significantly from a year earlier. Hay stocks on January 1 totaled 90.7 million tons, down 17.4 million from a year earlier. Consequently, 81 million tons were fed during May-December last year, compared with 69.5 million a year earlier. The use per RCAU during this period in 1983 was 0.99 tons, as against 0.77 fed in 1982.

January 1 stocks were the lowest since 1977, when 77.7 million tons were on hand. More RCAU's were on farms in 1977 than currently, but the rate of use per animal unit has increased in recent years. During January-April last year, 79 million tons of hay were fed, as cool, rainy weather prolonged the winter feeding period. The use rate per animal unit for January-April rose to 0.87 tons, from 0.81 the previous year. This year, more intense winter weather likely added to hay use during January, but this could be offset by an early spring. The rate of use per animal unit for the past 5 years averaged 0.82 tons. If use this winter is near average, total use for January-April would be about 73 million tons. This would leave carryover stocks of 17.7 million tons, compared with 29 million carried in. Favorable weather for February-April will be needed to keep disappearance down to 73 million tons. Consequently, this year's carry-over stocks will likely be the smallest since 1965.

The average farm price for all hay in mid-January was \$80 a ton, almost \$10 above a year earlier. The tightening supply will likely push hay prices higher over the next few months. The price of hay will probably set a record this spring, but much will depend on the weather and the extent to which early pasturing can replace hay feeding.

FOOD AND INDUSTRIAL DEMAND

FSI Demand May Exceed 950 Million Bushels in 1983/84

Food, seed, and industrial (FSI) use of corn during October-December was 220 million bushels, up 8 percent from 1982. A larger output of fuel alcohol and HFCS accounted for this increase.

Consumption is expected to continue at a strong pace for the remainder of 1983/84, possibly surpassing 950 million bushels. The wet-milling industry will likely raise corn use by 30 million bushels this season, mainly for producing HFCS to be used in soft drinks. Fuel alcohol producers (wet millers and dry millers) may increase output by 50 million gallons or more in 1983/84, thus using at least 20 million bushels of corn more than last year. In 1982/83, alcohol producers increased output by 150 million gallons, or 60 million bushels of corn, so this season's increase would represent a slowing in the rate of expansion.

Processors' margins have been squeezed in recent months because they have been forced to lower fuel alcohol prices to keep in line with falling gasoline prices. At the same time, corn prices have been sharply above a year earlier. However, as the heavy driving season approaches, gasoline prices are expected to rise. Expectations of lower corn prices by the end of the summer also provide encouragement for alcohol producers, but strength in corn prices through spring could sustain the squeeze.

Food, seed, and industrial use of corn¹

Products	1980/81	1981/82	1982/83	1983/84*
Million bushels				
Wet milled ²	480	510	540	570
Dry milled ³	160	162	163	160
Alcohol ⁴	75	120	180	200
Seed	20	19	15	20
Total	735	811	898	950

¹Year beginning October 1. ²HFCS, glucose, dextrose, and starch. ³Grits (food and beer), cornmeal, flour, cereal, snacks, and Mexican foods. ⁴Fuel, industrial, and beverage alcohol. *Forecast.

FEED DEMAND

The number of grain-consuming animal units (GCAU's) for the 1983/84 feeding year is estimated at 78.3 million—less than 1 percent below the 78.5 million on hand for 1982/83. A decrease in cattle on feed more than offset increases in the hog and poultry categories.

Grain-consuming animal units

Category	1982/83	1983/84	Change
Million units			
Dairy cattle	12.4	12.5	+0.1
Cattle on feed	18.4	17.8	-.6
Hogs	20.3	20.5	+.2
Poultry	20.6	20.7	+.1
Other	6.8	6.8	0
Total	78.5	78.3	-.2

A look at some aspects of the quarterly pattern of live-stock and poultry numbers for the feeding year is mean- ingful in terms of potential patterns of feed use. An index of the average number of livestock estimated on feed (weighted for relative feed consumption per unit) during January-March is down slightly from a year earli- er. However, because of the colder average temperatures over the Corn Belt, Lake States, and Northern Plains this year, actual feed use may be up about 2 percent from the previous year.

During April-May, the index of livestock and poultry units being fed may be down about 2 to 2-1/2 percent. However, developments in the late fall and winter may have altered livestock feeders' decisions, and the results may differ from the current forecast.

Quarterly grain-consuming animal units and feed and residual use of grains

Year and quarter	Grain-consuming animal units		Feed and residual use	
	Variable ¹	Fixed ²	Corn	Feed grains and wheat
	Million units	Million metric tons	Million units	Million metric tons
1982/83				
Oct.-Dec.	21.37	31.51	39.2	48.1
Jan.-Mar.	21.82	31.51	34.5	42.2
Apr.-May	21.62	31.51	20.9	24.7
June-Sept.	21.62	31.51	23.1	38.1
1983/84				
Oct.-Dec.	21.59	31.32	42.3	51.9
Jan.-Mar.	³ 21.56	31.32		
Apr.-May				
June-Sept.				

¹Cattle on feed, hogs, and broilers. ²Dairy, other beef cattle, other poultry, sheep, horses, and mules. ³Estimated.

Cattle and hog prices improved substantially from mid-November to mid-January. On the cost side, corn prices declined in October and held steady through the fall and early winter, instead of increasing as had been expected earlier. As a result of these price changes, the steer/corn price ratio at Omaha in late January was 22, compared with 17.8 last September, and the hog/corn ratio at Omaha rose from 13.7 to 16.1. Compared with a year earli- er, placements of cattle on feed in the seven monthly reporting States (Arizona, California, Colorado, Iowa,

Kansas, Nebraska, and Texas) were down 5 percent in October and 4 percent in November, but rose 13 percent in December and 5 percent in January.

If the increase in placements in December and January reflects the reaction to changes in steer prices and feed costs, then placements during January-March may be up somewhat more than expected earlier. This would mean less of a drop in feed use during the spring and early summer.

Another factor that changes the outlook somewhat is the small sign-up for the dairy production control program. The small participation in the program has a twofold effect. First, feed use in the dairy industry will decline only slightly as a result of the new dairy program. Second, beef cattle prices will be adversely affected far less than earlier expected. Both of these factors slightly lessen the downward adjustment in feed use likely for the last half of the feeding year.

WORLD COARSE GRAIN DEVELOPMENTS

In contrast to a gradual decline in wheat export prices during the second half of 1983, corn and sorghum prices rose steadily in response to PIK and the drought, and eventually exceeded 1982's prices. With or without PIK, foreign responses to short U.S. supplies would likely have been the same—a reduction in the short-term rate of growth in corn imports as the countries reacted to higher world feed grain prices. However, U.S. sales abroad are expected to remain at last year's level, chiefly because of continued crop shortfalls in competitor nations.

World and U.S. coarse grain stocks have fluctuated recently, causing some concern about the ability of the United States to expand coarse grain exports. During 1982/83, world coarse grain stocks, at almost 138 million tons, rose by more than 20 percent. Most of this increase, however, was in the United States, as foreign stocks actually fell 10 percent. This season, the United States is again bearing the brunt of the change, as foreign stocks are expected to increase somewhat while U.S. reserves plummet as much as 75 percent. However, wheat stocks remain high, and total U.S. grain stocks are deemed sufficient, as indicated by this January's offer to the Soviet Union of 10 million tons beyond the minimum amount (9-12 million tons) set by the U.S.-USSR Long-Term Grain Agreement.

Rebound in Coarse Grain Use Below Trend

The impact of the change in wheat and coarse grain prices in the major coarse grain-importing nations (EC, other Western Europe, Eastern Europe, USSR, and Japan) during 1983/84 is clear. As wheat was priced somewhat more attractive relative to corn than in previ- ous years, importers adjusted their wheat feed use upward at the expense of coarse grains. Nevertheless, world coarse grain feed use in 1983/84 is estimated to be the third highest on record, 231.2 million tons.

Had the U.S. supply situation not caused corn export prices to climb so substantially, the amount of coarse grain fed in the major importing countries would likely have been somewhat greater than is now estimated.

Based on trend analyses over the 1970's and early 1980's, 1983/84 coarse grain feeding among these countries may be as high as 244 million tons. This estimate, however, likely overstates coarse grain feed use because the absolute decline in recent years is outweighed by high use in some years in the late 1970's. Factors other than prices played a role in holding down coarse grain feed use from trend levels. These include economic conditions in competitor nations and debt problems among some of the major foreign exporter nations. Meat production in 1983/84 among the major European importers (with the exception of the USSR) has been stagnant. This has dampened the rate of growth in import demand for coarse grains.

The net effect of the factors that dampened coarse grain feed use among the major importing countries this season is less than the difference between the regression-predicted level (244 million tons) and the current estimate (231 million). Trends in wheat versus coarse grain feed use in the 1980's suggest that a more reasonable estimate of the impact is 5-8 million tons, as the centrally planned economies continue to increase the share of coarse grain in their livestock feed mix. The impact on import demand is substantially less, as feed consumption depends more on domestic production (a country typically feeds what it produces) than international supplies.

Most of the year-to-year fluctuation in coarse grain feeding among the major importing countries lies in the Soviet Union. Analysis of estimates of grains used for feeding by the major importers less the USSR, however, leads to the same conclusion: The maximum impact of price changes on coarse grain feed use among all the major importing nations is just over 5 million tons.

World Import Demand Falls

World import demand for coarse grains peaked in the late 1970's. Since 1980/81, however, demand has fallen dramatically. World imports, for example, fell to only 90 million tons in 1982/83, down almost 19 million from the 1980/81 level. The U.S. absorbed almost three-fourths of the decline. Coarse grain export competitors absorbed only 4 million of the 19-million-ton decline.

Most of the coarse grain production shortfalls in the major foreign exporting countries during the 1980's were due to short-term problems, such as bad weather in South Africa and Australia. Coarse grain shipments from the major foreign exporters, which in the early 1980's averaged over 28 million tons annually, are forecast to approach that level in 1983/84. In years of production shortfalls, much of the increased demand has benefited the United States. Given the anticipated production shortfall in South Africa and other nations this year, U.S. exports may be strengthened, as typical markets for these nations include Japan, the Soviet Union, and Taiwan—all major U.S. markets.

U.S. Outlook Favorable in 1984/85

Feed use of coarse grains among the major importing countries is forecast to rebound in 1984/85, from the relatively low levels of the early 1980's. The Soviet Union, largely the driving force of feed-use fluctuations among the major importers in the mid-1970's and early 1980's, is expected to continue its policy to increase the share of coarse grains fed to livestock at the expense of wheat. Therefore, Soviet imports will likely remain high in the near term. As such, the United States should remain a major source of supply for the Soviet Union. Within the next 5 years, Soviet efforts to expand corn-for-grain production may push imports to only the minimum levels detailed in their grain agreements with the United States and other countries, such as Canada, Argentina, Brazil, and Hungary.

For 1983/84, production prospects among the major coarse-grain exporters are mixed. Australia is forecast to rebound from its 1982 drought disaster and likely will produce record grain crops. On the other hand, South Africa appears headed for another poor year and will likely again be a net importer. On balance, the United States will probably maintain its present world market share during the mid-1980's, although longer term forecasts indicate that the share may fall slightly by the end of the decade. Japan, the USSR, Mexico, Taiwan, and Korea should remain the largest U.S. markets.

Commodity Price Relationships In The Southern Plains

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Abstract: Changes in weekly cash prices for corn, grain sorghum, and soybeans are compared for three locations—Houston, Kansas City, and the Texas High Plains—and among the commodities at the same location. The adjustments between locations are slower than those between commodities. For feed grains, price changes in Kansas City lead changes in the Texas High Plains and Houston.

Keywords: Prices, corn, sorghum, soybeans, market efficiency.

Introduction

The purpose of this article is to investigate the effects of market location and localized demand on short-term price relationships.

Short-term changes in weekly cash prices from January 1974 through December 1980 for corn, sorghum, and soybeans, at Houston, Kansas City, and the Texas High Plains were analyzed.

These locations include an export market (Houston), a major domestic market (Kansas City), and country market (Texas High Plains²). The prices are the average of the high and the low for Thursday of each week for Houston and the Texas High Plains, and the weekly average of daily prices for Kansas City.

The procedure uses two related techniques, both based on price comparison. Using lagged values, the first method measures whether prices in one period are related to those in the preceding period: thus indicating whether one price leads another. This procedure allows for the possibility of both prices leading at different times, a feedback relationship.

The second method measures the impact of a shock to the market and provides insights on the speed of price adjustments. The effects of a one-time shock over a period of time are summarized by using long-run multipliers—the cumulative effect of a change in one price on another. The adjustment period shows the length of time it takes the total effect to occur. Both the

adjustment period and the long-run multiplier suggest implications about market efficiency. An efficient market should reflect changes in supply and demand conditions quickly and accurately. Thus, other things being equal, a shorter adjustment period indicates a more efficient market.

Influence of Location on Price

The important factors determining price relationships are the size of each market, the direction of grain and soybean movements, and availability and cost of transportation. The Texas High Plains, the smallest of the three markets, is a deficit feed area; only small amounts of the three crops move from the Texas High Plains to Houston. Also, only a small amount goes from Kansas City to the Texas High Plains. A much larger amount of feed moves from Kansas City to Houston for export.

The results show that the prices for corn, sorghum, and soybeans in Kansas City affect almost all prices in the Texas High Plains and Houston. The only exception is soybeans in the Texas High Plains (table A). Conversely, the only prices having a significant impact on prices at Kansas City are corn and sorghum prices in Houston. Every multiplier measuring the impact of a change in Kansas City prices on prices in the other locations is statistically significant and larger than the reverse multiplier, indicating the direction of grain and soybean movements is an important factor in short-term price adjustment. Grain flows from Kansas City to the other locations, not the reverse direction. For example, a \$1-a-bushel increase in the corn prices at Kansas City leads to \$1.45 increase in Houston. Meanwhile, an increase of \$1 in Houston triggers a 10-cent decrease in Kansas City.

The Texas High Plains produces more sorghum than corn or soybeans. Accordingly, sorghum prices in the High Plains affect prices in Kansas City and Houston, although High Plains prices for both corn and soybeans have no significant effect on prices in the other locations.

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²The Texas High Plains, lying between Plainview, Canyon, and Farwell, is an important grain sorghum area. The quoted prices were collected from several locations in this area.

Table A.—Relationship of prices across locations

Commodity	Related prices	Adjustment period	
		Multiplier ¹	Wks.
Corn	High Plains/Kansas City	-.19	24
	High Plains/Houston	.22	60
	Kansas City/Houston	1.45*	22
	Kansas City/High Plains	1.15*	46
	Houston/Kansas City	-.10*	60
	Houston/High Plains	.40*	56
Sorghum	High Plains/Kansas City	.29*	7
	High Plains/Houston	.24*	5
	Kansas City/Houston	.91*	31
	Kansas City/High Plains	.36*	11
	Houston/Kansas City	-.59*	30
	Houston/High Plains	.25*	4
Soybeans	High Plains/Kansas City	.14	8
	High Plains/Houston	.64*	54
	Kansas City/Houston	1.04*	46
	Kansas City/High Plains	.79*	12
	Houston/Kansas City	.10	60
	Houston/High Plains	.30*	56

¹Interpreted as the cumulative change in the adjusting price caused by a \$1-a-bushel change in the leading price. For example, when the price of corn in Kansas City rises \$1 a bushel, the price of corn in Houston is expected to rise \$1.45 a bushel over a 22-week period.

*Significant at the 5-percent level.

The Houston corn price leads the Texas High Plains price, while the reverse is true for sorghum. The multipliers indicate Houston sorghum and soybean prices affect High Plains prices for these crops and in turn are affected by the High Plains prices. For corn, Houston prices appear to play a role in those in the High Plains. Houston is a high-volume market and reflects information about fluctuations in export demand.

All prices have a significant instantaneous relationship, which means a large percentage of price adjustments occur in less than a week. In general, the adjustment period is shortest for the Texas High Plains and longest for Houston. This could be related to the time needed to transport commodities. Because the Texas High Plains basically functions in isolation, there is little need for arbitrage by transportation before prices reach an equilibrium. However, all grain in Houston must be transported there, so prices may remain in short-term disequilibrium until the arbitrage by transportation is completed.

All of the own price multipliers at Houston are less than one, indicating that the Houston market overreacts to information. The ratio of exports to storage capacity for north Texas Gulf ports has averaged 14.63, well above other ports. The limited storage may be insufficient to meet short-run fluctuations in export demand. Thus, in the short-run a premium may exist for commodities already in Houston.

Relationships Among Commodity Prices

Geographical price adjustments are slower than price adjustments between commodities at the same location, perhaps because arbitrage by transportation takes time,

allowing disequilibrium to exist for a longer period. In no case are both the causality results and the multiplier results significant (table B). Because corn is traded in larger volumes, it is expected to dominate other commodities. For example, a change in corn prices in Kansas City triggers a change in soybean and sorghum prices. A change in corn prices at Houston, however, affects only soybean prices. Sorghum prices have an impact on corn prices in the High Plains. As expected, even though not always significant, the long-run multiplier for corn prices compared with other prices is always larger than the reverse.

A large percentage of price adjustments occur in less than a week, especially for corn and sorghum. Prices adjustments between commodities are quickest in the High Plains and slowest in Houston.

Table B.—Relationship of prices at the same location

Commodity	Related prices	Adjustment period	
		Multiplier ¹	Wks.
High Plains	Corn/sorghum	.46	5
	Corn/soybeans	1.02	4
	Sorghum/corn	.19*	5
	Soybeans/corn	.03	3
Kansas City	Corn/sorghum	1.13	10
	Corn/soybeans	1.51*	35
	Sorghum/corn	-.09	18
	Soybeans/corn	.09	36
Houston	Corn/sorghum	.83	35
	Corn/soybeans	.79*	58
	Sorghum/corn	-.25	44
	Soybeans/corn	.11	60

¹Interpreted as the cumulative change in the adjusting price caused by a \$1-a-bushel change in the leading price. For example, in the High Plains, when the price of sorghum rises \$1 a bushel, the price of corn is expected to rise 19 cents a bushel over a 5-week period. *Significant at the 5-percent level.

Summary

The major portion of price adjustments between Kansas City, Houston, and the Texas High Plains occur in less than a week. Price relationships across space are slower to reach an equilibrium than prices in one location. This could be a result of the time needed for arbitrage by transportation.

Kansas City prices tend to lead prices at the other two locations, possibly because Kansas City is a larger volume market and because grain flows from Kansas City to the other locations, but not the reverse direction. Houston and the Texas High Plains exhibit a feedback relationship. Price adjustments are quickest for the High Plains and slowest for Houston, probably as a result of time needed for transportation. Sorghum and soybean price fluctuations tend to lag corn price fluctuations.

Table 1.--Feed grains: marketing year supply, disappearance, area, and prices, 1978-83 1/

Year 2/	Supply			Disappearance				Ending stocks						
	Begin- ning stocks	Produc- tion	Imports	Total	Domestic use		Exports	Total	Privately owned	Govt. owned	Total			
					Food	Seed and residual								
					Alc. bever- ages	Seed	and	Total						
Million metric tons														
1978/79	41.4	221.5	0.3	263.2	14.4	5.1	1.4	135.9	156.8	60.2	217.0	3.7	42.5	46.2
1979/80	46.2	238.2	0.3	284.7	15.7	5.2	1.4	138.7	161.0	71.3	232.3	7.7	44.7	52.4
1980/81	52.4	198.0	0.3	250.7	17.1	5.4	1.3	123.0	146.8	69.3	216.1	7.1	27.5	34.6
1981/82	34.6	248.5	0.3	283.4	18.9	5.5	1.4	130.6	156.4	58.6	215.0	8.9	59.5	68.4
1982/83 4/	68.4	254.1	0.3	322.8	20.5	6.0	1.4	142.8	170.7	54.0	224.7	34.2	63.9	98.1
1983/84*	98.1	137.3	0.5	235.9	- - - - - (+ 1)	29.3	- - - - - (+ 5)	126.8	156.1 (+ 5)	55.0 (+ 2)	211.1 (+ 7)			24.8 (+ 5)
Area												Yield	Index	Government
National program												per hectare	Average price received by farmers 5/	support program
												harvested	Total	payments to participants
- - - - - Million hectares - - - - -												Metric tons		
1978/79	39.4	3.4	50.3	42.7	5.19	113	6/ 1,023							
1979/80	44.3	1.9	48.1	41.5	5.74	125	6/ 247							
1980/81	42.7	---	49.1	41.1	4.82	154	7/ 412							
1981/82	42.5	---	50.0	43.3	5.74	123	8/ 423							
1982/83 4/	---	1.3	49.3	43.3	5.87	136	8/ 418							
1983/84	---	15.7	41.6	32.5	4.22		6/ 1,063							

1/ Aggregated data on corn, sorghum, barley, and oats. 2/ The marketing year for corn and sorghum begins October 1; for oats and barley June 1. 3/ Includes total Government loans (original and resale). 4/ Preliminary. 5/ Excludes support payments. 6/ Deficiency and diversion payments. 7/ Disaster payments. 8/ Deficiency and disaster payments. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 2.--Corn: marketing year supply and disappearance, area, and prices, 1978-83

Year beginning October 1	Supply				Disappearance				Ending stocks Sept. 30					
	Begin- ning stocks	Produc- tion	Imports	Total	Domestic use				Total disap- pearance	Govt. owned	Privately owned	Total		
					Food 1/	Alc. bever- ages 2/	Seed and residual	Feed and residual						
Million bushels														
1978/79	1,111.4	7,267.9	1.2	8,380.5	531.2	70.0	19.5	4,322.8	4,943.5	2,133.1	7,076.6	99.7	1,204.2	1,303.9
1979/80	1,303.9	7,938.8	1.1	9,243.8	582.8	72.3	20.0	4,518.6	5,193.7	2,432.6	7,626.3	256.3	1,361.2	1,617.5
1980/81	1,617.5	6,644.8	1.2	8,263.5	641.8	73.3	20.2	4,139.0	4,874.3	2,355.2	7,229.5	237.8	796.2	1,034.0
1981/82	1,034.0	8,201.6	1.2	9,236.8	709.4	82.7	19.4	4,276.0	5,087.5	1,966.9	7,054.4	302.4	1,880.0	2,182.4
1982/83 4/	2,182.4	8,359.4	0.9	10,542.7	774.3	109.0	14.5	4,634.6	5,532.4	1,870.0	7,402.4	1,166.3	1,974.0	3,140.3
1983/84*	3,140.3	4,203.8	1.0	7,345.1	- - -	950.0 (+ 20)	- - -	3,975.1 (+ 150)	4,925.1 (+ 150)	1,875.0 (+ 75)	6,800.1 (+ 200)	-	-	545.0 (+ 150)
Area														
National program	Set-aside and diverted	Planted	Harvested for grain	Yield per acre harvested	Received by farmers 5/	Average prices				Government support program				
						St. Louis		Omaha		Gulf Ports		National		Total
						No. 2 Yellow	No. 2 Yellow	No. 2 Yellow	No. 2 Yellow	average loan rate	Target price participants			
----- Million acres ----- Bushels ----- Dollars per bushel ----- Mil. dol.														
1978/79	76.2	6.1	81.7	71.9	101.0	2.25	2.51	2.28	2.81	2.00	2.10	7/ 683		
1979/80	85.7	2.9	81.4	72.4	109.7	2.52	2.73	2.49	3.02	2.10	2.20	8/ 126		
1980/81	84.1	---	84.0	73.0	91.0	3.11	3.35	3.13	3.54	2.25	2.35	9/ 280		
1981/82	80.5	---	84.2	74.7	109.8	2.50	2.61	2.46	2.83	2.40	2.40	9/ 92		
1982/83 4/	---	2.1	81.8	73.0	114.5	2.68	2.98	2.82	3.16	2.55	2.70	10/ 292		
1983/84	---	31.3	60.2	51.5	81.6	3.20-3.40	6/ 3.47	6/ 3.19	6/ 3.68	2.65	2.86	11/ 850		

1/ Includes industrial products. 2/ Malt beverage and distilled liquor products converted to a corn basis. 3/ Includes quantity under loan and farmer-owned reserve. 4/ Preliminary. 5/ Excludes support payments. 6/ October 1983-January 1984 average. 7/ Deficiency, disaster, and diversion payments. 8/ Disaster and diversion payments. 9/ Disaster payments. 10/ Deficiency and disaster payments. 11/ Diversion payments. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 3.--Sorghum: marketing year supply and disappearance, area, and prices, 1978-83

Year beginning October 1	Supply			Disappearance				Ending stocks Sept. 30		
	Beginning stocks	Production	Imports	Domestic use	Feed	Exports	Total	Govt. owned	Private owned	Total
				Alc. Food	Seed ages	and residual	Total			
Million bushels										
1978/79	190.5	731.3	---	6.0	4.1	1.8	543.8	555.7	206.6	762.3
1979/80	159.5	808.9	---	6.0	4.6	2.0	484.4	497.0	324.9	821.9
1980/81	146.5	579.2	---	5.0	4.3	2.0	301.2	312.5	304.6	617.1
1981/82	108.6	879.2	---	4.3	4.8	2.0	431.0	442.1	249.1	691.2
1982/83 2/	296.6	841.4	---	4.2	3.9	1.8	514.7	524.6	214.5	739.1
1983/84*	398.9	483.1	---	---	10.0	---	450.0 (+ 25)	460.0 (+ 25)	200.0 (+ 15)	660.0 (+ 30)
Area										
	Set-aside and diverted	Harvested for grain	Yield per acre	Received by farmers	Average prices	Kansas City No. 2 Yellow	Texas No. 2 Yellow	Gulf ports No. 2 Yellow	National average loan rate	Government support program Total payments to participants
	Million acres	Million acres	Bushels	Million bushels	Dollars per cwt.	---	---	---	---	Mill. dol.
1978/79	13.7	1.4	16.2	13.4	54.5	3.59	4.00	4.40	4.65	3.39
1979/80	15.9	1.2	15.3	12.9	62.7	4.18	4.65	4.97	5.54	3.57
1980/81	12.8	---	15.6	12.5	46.3	5.25	5.36	5.86	6.16	3.82
1981/82	14.3	---	16.0	13.7	64.1	4.27	4.29	4.85	4.97	4.07
1982/83 2/	---	0.7	16.1	14.2	59.1	4.50	4.96	5.30	5.55	4.32
1983/84	---	5.9	11.8	9.9	48.8	5.00-5.36	4/ 5.22	4/ 5.46	4/ 5.95	4.50

1/ Includes quantity under loan and farmer-owned reserve. 2/ Preliminary. 3/ Excludes support payments. 4/ October 1983-January 1984 average. 5/ Deficiency, disaster, and diversion payments. 6/ Disaster payments. 7/ Deficiency and disaster payments. 8/ Diversion payments. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 4.--Barley: marketing year supply and disappearance, area, and prices, 1978-83

Year beginning June 1	Supply			Disappearance				Ending stocks May 31						
	Begin- ning stocks	Produc- tion	Imports	Total	Domestic use		Exports	Total	Govt. owned	Privately owned	Total			
					Alc. Food ages	Feed and residual								
Million bushels														
1978/79	173.1	454.8	10.5	638.4	6.0	147.6	13.6	217.5	384.7	25.7	410.4	2.5	225.5	228.0
1979/80	228.0	382.8	11.8	622.6	7.0	150.9	14.0	203.8	375.7	54.8	430.5	3.2	188.9	192.1
1980/81	192.1	361.0	10.2	563.3	7.0	155.3	13.2	173.8	349.3	76.7	426.0	3.4	133.9	137.3
1981/82	137.3	479.3	9.6	626.2	6.9	150.9	16.3	202.3	376.4	100.1	476.5	3.3	146.4	149.7
1982/83 2/	149.7	522.4	10.7	682.8	7.2	145.5	17.4	242.7	412.8	47.2	460.0	6.0	216.8	222.8
1983/84*	222.8	519.0	10.0	751.8	- - -	175.0 (+ 3)	- - -	339.8 (+ 15)	514.8 (+ 15)	100.0 (+ 5)	614.8 (+ 20)	- - -	- - -	137.0 (+ 10)
Average prices												Government support program		
National program	Set-aside and diverted	Planted	Harvested for grain	Yield per harvested acre	Received by farmers	No. 2 or No. 3 or better, better, feed, malting			Portland (+ 5)	National average loan rate	Target price payments to participants	Total		
						No. 2	No. 3	No. 2						
Bushels												Dollars per bushel		Mill. dol.
1978/79	7.5	0.8	10.0	9.2	49.2	1.92	1.80	2.38	2.10	1.63	2.25	5/ 97		
1979/80	7.8	0.7	8.1	7.5	50.9	2.29	2.16	2.87	2.69	1.71	2.40	6/ 22		
1980/81	8.7	---	8.3	7.3	49.6	2.86	2.60	3.64	3.34	1.83	2.55	7/ 31		
1981/82	10.2	---	9.7	9.2	52.3	2.45	2.21	3.06	2.87	1.95	2.60	6/ 63		
1982/83 2/	---	0.4	9.6	9.1	57.3	2.23	1.76	2.53	2.52	2.08	2.60	8/ 60		
1983/84	---	1.0	10.6	9.9	52.4	2.45-2.55	4/ 2.38	4/ 2.79	4/ 2.85	2.16	2.60	9/ 67		

1/ Includes quantity under loan and farmer-owned reserve. 2/ Preliminary. 3/ Excludes support payments. 4/ June 1983-January 1984 average. 5/ Deficiency, disaster, and diversion payments. 6/ Deficiency and disaster payments. 7/ Disaster payments. 8/ Deficiency payments. 9/ Deficiency and diversion payments. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 5.--Oats: marketing year supply and disappearance, area, and prices, 1978-83

Year beginning June 1	Supply			Disappearance				Ending stocks May 31						
	Begin- ning stocks	Produc- tion	Imports	Total	Domestic use		Exports	Total	Govt. owned	Privately owned	Total			
					Food	Seed and residual								
					Alc. bever- ages	Seed and residual								
Million bushels														
1978/79	313.1	581.7	0.7	895.5	41.0	---	36.1	525.7	602.8	12.7	615.5	2.7	277.3	280.0
1979/80	280.0	526.6	0.9	807.5	40.7	---	34.6	491.7	567.0	4.1	571.1	2.7	233.7	236.4
1980/81	236.4	458.3	1.3	696.0	41.0	---	33.0	431.8	505.8	13.3	519.1	2.3	174.6	176.9
1981/82	176.9	509.2	1.6	687.7	41.2	---	35.4	452.5	529.1	6.6	535.7	0.7	151.3	152.0
1982/83 2/	152.0	620.5	3.9	776.4	41.7	---	43.3	458.2	543.2	3.0	546.2	0.7	229.5	230.2
1983/84*	230.2	477.3	18.0	725.5	- - -	80.0	- - -	480.5 (+ 15)	560.5 (+ 20)	5.0 (+ 2)	565.5 (+ 20)			160.0 (+ 15)
Average prices														
National program	Set-aside and diverted 3/	Area planted	Yield per acre	Harvested for grain	Received by farmers 4/	Minneapolis		Toledo	National	Average	Target	payments to participants	Total	
						No. 2 white, heavy	No. 2 white, heavy							
Dollars per bushel														
Busheles														
1978/79	---	16.4	11.1	52.3	1.20	1.43	1.79	1.37	1.03	---	---	---	---	
1979/80	---	14.0	9.7	54.4	1.36	1.57	1.87	1.60	1.08	---	---	---	---	
1980/81	---	13.4	8.7	53.0	1.79	2.04	2.42	2.17	1.16	---	---	---	---	
1981/82	---	13.7	9.4	54.1	1.89	2.14	2.36	2.23	1.24	---	---	---	---	
1982/83 2/	0.1	14.3	10.6	58.4	1.48	1.69	2.18	1.55	1.31	1.50	---	---	---	
1983/84	0.5	20.3	9.1	52.5	1.60-1.70	5/ 1.86	5/ 1.93	5/ 1.96	1.36	1.60	6/ 21	---	---	

1/ Includes quantity under loan and farmer-owned reserve. 2/ Preliminary. 3/ Not included in the program until 1982. 4/ Excludes support payments. 5/ June 1983-January 1984 average. 6/ Deficiency and diversion payments. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 6.--Feed grains: feed year supply and disappearance, specified periods, 1979-83
(corn, sorghum, oats, barley)

Year and periods beginning October 1	Supply			Disappearance					Ending stocks				
	Begin- ning stocks	Produc- tion	Imports:	Total	Domestic use			Exports	Total	Govt. owned	Privately owned	Total	Total
					Food	Alc.	Seed						
					bever-	ages	and						
					ages		residual						
Million metric tons													
1979/80													
Oct.-Dec.	55.5	222.2	0.1	277.8	3.5	1.2	0.1	47.6	52.4	19.2	71.6	3.8	206.2
Jan.-Mar.	206.2	---	0.1	206.3	3.2	1.3	0.3	39.6	44.4	17.8	62.2	3.8	144.1
Apr.-May	144.1	---	2/	144.1	2.5	1.0	0.8	20.3	24.6	11.6	36.2	6.7	107.9
June-Sept.	107.9	14.5	0.1	122.5	6.5	1.9	0.2	30.4	39.0	23.1	62.1	7.7	60.4
Mkt. year	55.5	236.7	0.3	292.5	15.7	5.4	1.4	137.9	160.4	71.7	232.1	7.7	60.4
1980/81													
Oct.-Dec.	60.4	183.4	0.1	243.9	3.7	1.2	0.1	45.5	50.5	20.5	71.0	7.7	172.9
Jan.-Mar.	172.9	---	0.1	173.0	3.2	1.3	0.3	32.1	36.9	18.7	55.6	7.6	117.4
Apr.-May	117.4	---	2/	117.4	2.8	1.0	0.8	20.8	25.4	11.3	36.7	7.6	80.7
June-Sept.	80.7	17.8	0.1	98.6	7.5	1.8	0.2	24.8	34.3	18.8	53.1	7.1	45.5
Mkt. year	60.4	201.2	0.3	261.9	17.2	5.3	1.4	123.2	147.1	69.3	216.4	7.1	45.5
1981/82													
Oct.-Dec.	45.5	230.7	0.1	276.3	4.1	1.1	0.1	47.4	52.7	16.6	69.3	7.4	207.0
Jan.-Mar.	207.0	---	0.1	207.1	3.5	1.4	0.3	36.6	41.8	14.8	56.6	7.7	150.5
Apr.-May	150.5	---	0.1	150.6	3.1	1.0	0.9	20.1	25.1	11.2	36.3	7.9	114.3
June-Sept.	114.3	20.4	0.1	134.8	8.2	1.9	0.2	26.3	36.6	15.8	52.4	8.9	82.4
Mkt. year	45.5	251.1	0.4	297.0	18.9	5.4	1.5	130.4	156.2	58.4	214.6	8.9	82.4
1982/83													
Oct.-Dec.	82.4	233.7	0.1	316.2	4.7	1.4	0.1	48.1	54.3	14.9	69.2	12.2	247.0
Jan.-Mar.	247.0	---	0.1	247.1	3.8	1.5	0.2	41.1	46.6	14.8	61.4	13.6	185.7
Apr.-May	185.7	---	0.1	185.8	3.3	1.0	0.9	24.7	29.9	8.3	38.2	14.0	147.6
June-Sept.	147.6	18.2	0.3	166.1	8.8	2.1	0.2	30.4	41.5	16.1	57.6	34.3	108.5
Mkt. year	82.4	251.9	0.6	334.9	20.6	6.0	1.4	144.3	172.3	54.1	226.4	34.3	108.5
1983/84													
Oct.-Dec.	108.5	119.0	0.1	227.6	5.3	1.2	0.1	49.9	56.5	15.7	72.2	36.2	155.4
Jan.-Mar.													
Apr.-May													
June-Sept.													
Mkt. year													

1/ Includes quantity under loan and farmer-owned reserve. 2/ Less than 50,000 metric tons.

Table 7.--Corn: marketing year supply and disappearance, specified periods, 1979-83

Year and periods beginning October 1	Supply			Disappearance					Ending stocks		
	Beginning stocks	Production	Imports	Total	Food: 1/	Alc. beverage 2/	Domestic use Seed and residual	Exports	Total disappearance	Govt. owned	Privately owned 3/
Million bushels											
1979/80											
Oct.-Dec.	1,303.9	7,938.8	0.3	9,243.0	128.2	16.3	---	1,549.4	1,693.9	662.9	2,356.8
Jan.-Mar.	6,886.2	---	0.3	6,886.5	116.6	18.4	4.0	1,308.2	1,447.2	582.0	2,029.2
Apr.-May	4,857.3	---	0.1	4,857.4	93.2	13.9	12.0	682.3	801.4	385.6	1,187.0
June-Sept.	3,670.4	---	0.4	3,670.8	244.8	23.7	4.0	978.7	1,251.2	802.1	2,053.3
Mkt. year	1,303.9	7,938.8	1.1	9,243.8	582.8	72.3	20.0	4,518.6	5,193.7	2,432.6	7,626.3
1980/81											
Oct.-Dec.	1,617.5	6,644.8	0.2	8,262.5	136.3	16.6	---	1,523.0	1,675.9	727.8	2,403.7
Jan.-Mar.	5,858.8	---	0.3	5,859.1	116.3	18.3	4.0	1,100.4	1,239.0	632.9	1,871.9
Apr.-May	3,987.2	---	0.1	3,987.3	106.7	13.8	12.2	684.7	817.4	395.7	1,213.1
June-Sept.	2,774.2	---	0.6	2,774.8	282.5	24.6	4.0	830.9	1,142.0	598.8	1,740.8
Mkt. year	1,617.5	6,644.8	1.2	8,263.5	641.8	73.3	20.2	4,139.0	4,874.3	2,355.2	7,229.5
1981/82											
Oct.-Dec.	1,034.0	8,201.6	0.4	9,236.0	153.2	16.8	---	1,552.8	1,722.8	545.5	2,268.3
Jan.-Mar.	6,967.7	---	0.3	6,968.0	128.4	20.2	3.9	1,194.3	1,346.8	489.4	1,836.2
Apr.-May	5,131.8	---	0.1	5,131.9	119.4	15.2	12.1	672.1	818.8	409.0	1,227.8
June-Sept.	3,904.1	---	0.4	3,904.5	308.4	30.5	3.4	856.8	1,199.1	523.0	1,722.1
Mkt. year	1,034.0	8,201.6	1.2	9,236.8	709.4	82.7	19.4	4,276.0	5,087.5	1,966.9	7,054.4
1982/83											
Oct.-Dec.	2,182.4	8,359.4	0.3	10,542.1	175.2	27.9	---	1,542.1	1,745.2	512.7	2,257.9
Jan.-Mar.	8,284.2	---	0.2	8,284.4	140.0	28.0	1.3	1,359.9	1,529.2	507.9	2,037.1
Apr.-May	6,247.3	---	0.1	6,247.4	125.0	17.6	10.3	823.7	976.6	308.5	1,285.1
June-Sept.	4,962.3	---	0.3	4,962.6	334.1	35.5	2.9	908.9	1,281.4	540.9	1,822.3
Mkt. year	2,182.4	8,359.4	0.9	10,542.7	774.3	109.0	14.5	4,634.6	5,532.4	1,870.0	7,402.4
1983/84											
Oct.-Dec.	3,140.3	4,203.8	0.3	7,344.4	200.3	19.7	---	1,667.0	1,887.0	528.9	2,415.9
Jan.-Mar.	---	---	---	---	---	---	---	---	---	---	---
Apr.-May	---	---	---	---	---	---	---	---	---	---	---
June-Sept.	---	---	---	---	---	---	---	---	---	---	---
Mkt. year	---	---	---	---	---	---	---	---	---	---	---

1/ Includes industrial products. 2/ Malt beverage and distilled liquor grain products converted to a corn basis. 3/ Includes quantity under loan and farmer-owned reserve.

Table 8.--Sorghum: marketing year supply and disappearance, specified periods, 1979-83

Year and periods beginning October 1	Supply		Disappearance						Ending stocks			
	Begin- ning stocks	Produc- tion	Imports	Total	Domestic use			Exports	Total disap- pearance	Govt. owned	Privately owned	Total
					Food	Alc. bever- ages	Seed and residual					
Million bushels												
1979/80												
Oct.-Dec.	159.5	808.9	---	968.4	1.6	1.3	---	243.6	246.5	74.2	320.7	45.3
Jan.-Mar.	647.7	---	---	647.7	1.6	1.2	0.2	140.2	143.2	108.5	251.7	45.6
Apr.-May	396.0	---	---	396.0	1.4	0.7	1.2	54.5	57.8	60.3	118.1	45.6
June-Sept.	277.9	---	2/	277.9	1.4	1.4	0.6	46.1	49.5	81.9	131.4	43.9
Mkt. year	159.5	808.9	2/	968.4	6.0	4.6	2.0	484.4	497.0	324.9	821.9	43.9
1980/81												
Oct.-Dec.	146.5	579.2	2/	725.7	1.6	1.2	---	192.3	195.1	66.2	261.3	43.7
Jan.-Mar.	464.4	---	2/	464.4	1.6	0.9	0.2	63.8	66.5	84.1	150.6	43.5
Apr.-May	313.8	---	2/	313.8	0.8	0.7	1.2	84.8	87.5	41.7	129.2	43.8
June-Sept.	184.6	---	2/	184.6	1.0	1.5	0.6	-39.7	-36.6	112.6	76.0	38.2
Mkt. year	146.5	579.2	2/	725.7	5.0	4.3	2.0	301.2	312.5	304.6	617.1	38.2
1981/82												
Oct.-Dec.	108.6	879.2	2/	987.8	1.3	1.3	---	217.9	220.5	77.8	298.3	38.4
Jan.-Mar.	689.5	---	2/	689.5	1.3	1.3	0.2	150.5	153.3	74.3	227.6	38.2
Apr.-May	461.9	---	2/	461.9	0.5	0.8	1.2	57.8	60.3	21.8	82.1	38.3
June-Sept.	379.8	---	2/	379.8	1.2	1.4	0.6	4.8	8.0	75.2	83.2	42.9
Mkt. year	108.6	879.2	2/	987.8	4.3	4.8	2.0	431.0	442.1	249.1	691.2	42.9
1982/83												
Oct.-Dec.	296.6	841.4	2/	1,138.0	1.4	1.0	---	258.1	260.5	67.0	327.5	46.7
Jan.-Mar.	810.5	---	2/	810.5	1.2	1.0	0.1	125.6	127.9	62.7	190.6	47.8
Apr.-May	619.9	---	---	619.9	0.4	0.6	0.8	75.9	77.7	14.1	91.8	54.0
June-Sept.	528.1	---	2/	528.1	1.2	1.3	0.9	55.1	58.5	70.7	129.2	175.6
Mkt. year	296.6	841.4	2/	1,138.0	4.2	3.9	1.8	514.7	524.6	214.5	739.1	175.6
1983/84												
Oct.-Dec.	398.9	483.1	---	882.0	1.3	1.0	---	167.1	169.4	62.1	231.5	196.0
Jan.-Mar.	---	---	---	---	---	---	---	---	---	---	---	---
Apr.-May	---	---	---	---	---	---	---	---	---	---	---	---
June-Sept.	---	---	---	---	---	---	---	---	---	---	---	---

1/ Includes quantity under loan and farmer-owned reserve. 2/ Less than 50,000 bushels.

Table 9.--Barley: marketing year supply and disappearance, specified periods, 1979-83

Year and periods beginning June 1	Supply			Disappearance					Ending stocks		
	Begin- ning stocks	Produc- tion	Imports	Total		Domestic use			Total	Govt. owned	Privately owned
						Food	Alc. bever- ages	Seed and residual			
									Exports	disap- pearance	1/
Million bushels											
1979/80											
June-Sept.	228.0	382.8	3.7	614.5	2.5	51.9	1.1	87.3	142.8	9.9	2.9
Oct.-Dec.	461.8	---	2.8	464.6	1.7	34.0	2.0	38.9	76.6	22.4	3.1
Jan.-Mar.	365.6	---	3.2	368.8	1.7	37.0	3.4	53.3	95.4	11.1	3.3
Apr.-May	262.3	---	2.1	264.4	1.1	28.0	7.5	25.3	60.9	11.4	3.2
Mkt. year	228.0	382.8	11.8	622.6	7.0	150.9	14.0	203.8	375.7	54.8	3.2
1980/81											
June-Sept.	192.1	361.0	3.5	556.6	2.5	56.6	1.2	78.9	139.2	24.9	3.5
Oct.-Dec.	392.5	---	2.3	394.8	1.7	33.9	2.2	32.2	70.0	21.4	3.5
Jan.-Mar.	303.4	---	2.7	306.1	1.7	36.0	3.7	38.6	80.0	102.7	3.4
Apr.-May	203.4	---	1.7	205.1	1.1	28.8	6.1	24.1	60.1	7.7	3.4
Mkt. year	192.1	361.0	10.2	563.3	7.0	155.3	13.2	173.8	349.3	76.7	3.4
1981/82											
June-Sept.	137.3	479.3	2.4	619.0	2.5	54.5	1.3	76.5	134.8	32.6	3.3
Oct.-Dec.	451.6	---	2.4	454.0	1.7	32.1	2.3	51.8	87.9	33.0	3.3
Jan.-Mar.	333.1	---	2.7	335.8	1.7	37.2	4.0	42.9	85.8	23.1	3.3
Apr.-May	226.9	---	2.1	229.0	1.0	27.1	8.7	31.1	67.9	11.4	3.3
Mkt. year	137.3	479.3	9.6	626.2	6.9	150.9	16.3	202.3	376.4	100.1	3.3
1982/83											
June-Sept.	149.7	522.4	5.1	677.2	2.5	51.3	1.3	95.3	150.4	25.4	3.9
Oct.-Dec.	501.4	---	1.9	503.3	1.8	32.1	2.8	42.0	78.7	6.5	4.8
Jan.-Mar.	418.1	---	2.2	420.3	1.8	35.5	3.9	69.7	110.9	12.7	5.8
Apr.-May	296.7	---	1.5	298.2	1.1	26.6	9.4	35.7	72.8	2.6	6.0
Mkt. year	149.7	522.4	10.7	682.8	7.2	145.5	17.4	242.7	412.8	47.2	6.0
1983/84											
June-Sept.	222.8	519.0	3.4	745.2	2.5	53.8	1.2	148.3	205.8	23.4	9.3
Oct.-Dec.	516.0	---	1.5	517.5	1.7	32.8	2.4	69.5	106.4	32.9	11.0
Jan.-Mar.	---	---	---	---	---	---	---	---	---	---	---
Apr.-May	---	---	---	---	---	---	---	---	---	---	---
Mkt. year	---	---	---	---	---	---	---	---	---	---	---

1/ Includes quantity under loan and farmer-owned reserve.

Table 10.--Oats: marketing year supply and disappearance, specified periods, 1979-83

Year and periods beginning June 1	Supply			Disappearance					Ending stocks		
	Begin- ning stocks	Produc- tion	Imports	Total	Domestic use			Exports	Total	Govt. owned	Privately owned
					Food	Alc.	Seed and residual				
					ages						1/
Million bushels											
1979/80											
June-Sept.	280.0	526.6	0.3	806.9	14.6	---	1.7	221.6	237.9	0.9	238.8
Oct.-Dec.	568.1	---	0.2	568.3	10.4	---	1.7	77.5	89.6	1.9	91.5
Jan.-Mar.	476.8	---	0.2	477.0	10.3	---	6.9	119.7	130.9	0.5	137.4
Apr.-May	339.6	---	0.2	339.8	5.4	---	24.3	72.9	102.6	0.8	103.4
Mkt. year	280.0	526.6	0.9	807.5	40.7	---	34.6	491.7	567.0	4.1	571.1
1980/81											
June-Sept.	236.4	458.3	0.6	695.3	15.0	---	1.8	190.0	206.8	3.9	210.7
Oct.-Dec.	484.6	---	0.2	484.8	10.0	---	1.8	79.2	91.0	2.8	93.8
Jan.-Mar.	391.0	---	0.3	391.3	10.0	---	7.0	115.6	132.6	2.6	135.2
Apr.-May	256.1	---	0.2	256.3	6.0	---	22.4	47.0	75.4	4.0	79.4
Mkt. year	236.4	458.3	1.3	696.0	41.0	---	33.0	431.8	505.8	13.3	519.1
1981/82											
June-Sept.	176.9	509.2	0.3	686.4	16.0	---	2.0	206.7	224.7	3.2	227.9
Oct.-Dec.	458.5	---	0.2	458.7	10.0	---	2.0	80.3	92.3	1.2	93.5
Jan.-Mar.	365.2	---	0.2	365.4	10.0	---	7.3	110.0	127.3	1.2	128.5
Apr.-May	236.9	---	0.9	237.8	5.2	---	24.1	55.5	84.8	1.0	85.8
Mkt. year	176.9	509.2	1.6	687.7	41.2	---	35.4	452.5	529.1	6.6	535.7
1982/83											
June-Sept.	152.0	620.5	0.8	773.3	16.2	---	2.0	170.3	188.5	1.3	189.8
Oct.-Dec.	583.5	---	0.2	583.7	10.0	---	2.0	95.1	107.1	1.0	108.1
Jan.-Mar.	475.6	---	1.6	477.2	10.7	---	7.6	124.8	143.1	0.3	143.4
Apr.-May	333.8	---	1.3	335.1	4.8	---	31.7	68.0	104.5	0.4	104.9
Mkt. year	152.0	620.5	3.9	776.4	41.7	---	43.3	458.2	543.2	3.0	546.2
1983/84											
June-Sept.	230.2	477.3	11.7	719.2	15.8	---	1.9	195.4	213.1	0.8	213.9
Oct.-Dec.	505.3	---	4.9	510.2	9.9	---	1.9	119.2	131.0	0.7	131.7
Apr.-May											
Mkt. year											

1/ Includes quantity under loan and farmer-owned reserve.

Table 11.--Average prices received by farmers, United States, by months, 1979-84

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average weighted by sales 1/
<u>Dollars per bushel</u>													
Corn													
1979	2.41	2.27	2.38	2.45	2.39	2.40	2.36	2.42	2.49	2.73	2.92	3.01	2.52
1980	2.99	3.10	3.19	3.19	3.22	3.25	3.24	3.24	3.17	3.14	2.87	2.55	3.11
1981	2.45	2.34	2.39	2.54	2.44	2.46	2.55	2.60	2.57	2.50	2.30	2.15	2.50
1982	1.98	2.13	2.26	2.36	2.56	2.71	2.95	3.03	3.04	3.13	3.35	3.32	2.68
1983	3.15	3.17	3.15	*3.15									
<u>Dollars per cwt</u>													
Sorghum													
1979	3.90	3.99	3.90	4.05	3.98	4.05	3.96	4.04	4.49	4.95	5.12	5.12	4.18
1980	5.36	5.48	5.49	5.48	5.33	5.17	5.25	5.16	5.03	4.84	4.55	4.07	5.25
1981	3.90	3.87	3.95	4.09	4.08	4.00	4.10	4.35	4.17	3.96	3.95	3.80	4.27
1982	3.70	3.78	3.97	4.09	4.42	4.67	4.92	5.05	5.05	5.03	5.29	5.26	4.50
1983	5.02	4.96	4.93	*4.92									
Item and year beginning June 1	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Average weighted by sales 1/
<u>Dollars per bushel</u>													
Oats													
1979	1.35	1.33	1.24	1.29	1.31	1.41	1.31	1.39	1.37	1.34	1.38	1.43	1.36
1980	1.48	1.50	1.53	1.63	1.65	1.84	1.92	1.98	2.01	2.08	2.05	2.05	1.79
1981	1.99	1.84	1.72	1.74	1.78	1.88	1.94	1.97	1.99	2.02	1.99	1.99	1.89
1982	1.88	1.57	1.39	1.35	1.32	1.40	1.44	1.46	1.48	1.48	1.54	1.54	1.48
1983	1.50	1.46	1.45	1.55	1.62	1.67	1.73	*1.76					
Barley													
1979	2.30	2.22	2.23	2.33	2.32	2.40	2.32	2.27	2.23	2.18	2.15	2.21	2.29
1980	2.36	2.52	2.59	2.65	2.81	2.90	2.97	3.09	3.05	3.04	3.04	3.00	2.86
1981	2.94	2.41	2.37	2.44	2.38	2.49	2.48	2.50	2.40	2.40	2.42	2.53	2.45
1982	2.39	2.16	2.20	2.17	1.98	2.06	2.19	2.16	2.00	2.09	2.02	2.37	2.23
1983	2.32	2.20	2.34	2.46	2.53	2.55	2.55	*2.64					
Item and year beginning May 1	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Average weighted by sales
<u>Dollars per ton</u>													
Hay (mid-month)													
1979	65.60	58.00	56.00	57.50	59.00	60.80	58.90	60.10	59.10	60.00	57.40	60.10	59.50
1980	69.30	65.10	67.00	67.20	71.90	77.20	75.00	74.80	72.80	72.50	69.80	68.20	71.00
1981	75.30	66.90	64.00	63.90	62.70	64.80	65.40	65.70	67.90	69.90	69.50	73.30	67.10
1982	76.80	68.60	65.30	63.90	65.90	66.30	68.20	68.10	70.50	73.50	70.10	73.70	68.80
1983	83.00	75.90	72.00	72.20	74.20	78.50	76.40	77.90	80.00				

1/ Includes an allowance for unredeemed loans and purchase agreement deliveries valued at the average loan rate, by States; excludes Government payments.

*Preliminary.

Source: Agricultural Prices, Crop Reporting Board, USDA.

Table 12.--Cash prices at principal markets, 1979-84

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Simple average
<u>Dollars per bushel</u>													
CORN No. 2 Yellow, St. Louis 1/													
1979	2.59	2.51	2.66	2.50	2.64	2.54	2.53	2.60	2.66	3.01	3.31	3.26	2.73
1980	3.35	3.53	3.59	3.60	3.47	3.42	3.49	3.42	3.33	3.34	3.03	2.61	3.35
1981	2.53	2.59	2.54	2.65	2.61	2.66	2.78	2.78	2.75	2.68	2.42	2.32	2.61
1982	2.12	2.43	2.49	2.52	2.79	2.99	3.24	3.24	3.27	3.39	3.68	3.60	2.98
1983	3.50	3.53	3.45	*3.41									
CORN No. 2 Yellow, Omaha													
1979	2.37	2.32	2.36	2.26	2.33	2.23	2.32	2.43	2.50	2.81	2.98	3.01	2.49
1980	3.16	3.34	3.30	3.29	3.18	3.17	3.24	3.24	3.19	3.15	2.79	2.51	3.13
1981	2.44	2.39	2.37	2.47	2.45	2.48	2.61	2.65	2.65	2.54	2.23	2.23	2.46
1982	2.12	2.35	2.37	2.42	2.62	2.82	3.09	3.10	3.11	3.18	3.39	3.32	2.82
1983	3.23	3.24	3.17	*3.11									
<u>Dollars per cwt</u>													
SORGHUM No. 2 Yellow, Kansas City													
1979	4.42	4.41	4.57	4.21	4.35	4.20	4.15	4.31	4.49	5.36	5.71	5.01	4.65
1980	5.65	5.91	5.82	5.79	5.52	5.46	5.49	5.38	5.23	5.29	4.58	4.16	5.36
1981	4.14	4.14	4.27	4.44	4.26	4.28	4.45	4.48	4.50	4.38	4.02	4.06	4.29
1982	3.85	4.25	4.37	4.54	4.87	5.08	5.30	5.37	5.37	5.32	5.69	5.55	4.96
1983	5.37	5.25	5.16	*5.09									
Item and year beginning June 1	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average
<u>Dollars per bushel</u>													
OATS No. 2 Heavy, Minneapolis													
1979	1.68	1.60	1.47	1.55	1.65	1.67	1.59	1.52	1.50	1.48	1.52	1.62	1.57
1980	1.67	1.80	1.70	1.86	1.96	2.15	2.16	2.20	2.25	2.23	2.21	2.23	2.04
1981	2.18	2.02	1.99	2.02	2.09	2.28	2.10	2.23	2.26	2.16	2.21	2.16	2.14
1982	2.12	1.87	1.53	1.51	1.51	1.67	1.67	1.67	1.67	1.63	1.73	1.71	1.69
1983	1.67	1.60	1.79	1.94	2.00	1.97	1.94	*1.98					
BARLEY No. 2 or Better Feed, Minneapolis													
1979	2.16	2.39	2.15	2.22	2.34	2.11	2.15	2.09	2.04	2.06	2.12	2.09	2.16
1980	2.15	2.48	2.39	2.43	2.77	3.03	2.75	2.81	2.90	2.63	2.51	2.39	2.60
1981	2.09	2.26	2.35	2.21	2.26	2.31	2.06	2.20	2.27	2.16	2.16	2.24	2.21
1982	2.12	1.85	1.72	1.69	1.54	1.58	1.59	1.63	1.72	1.73	2.01	1.95	1.76
1983	1.96	1.95	2.42	2.61	2.60	2.53	2.39	*2.55					
BARLEY No. 3 or Better Malting, 65% or Better Plump, Minneapolis													
1979	2.80	2.82	2.67	3.10	3.18	3.06	2.93	2.87	2.81	2.69	2.73	2.82	2.87
1980	2.99	3.36	3.27	3.63	3.80	3.88	3.77	3.75	3.83	3.71	3.84	3.80	3.64
1981	3.34	2.95	3.15	3.05	3.02	3.07	2.92	3.00	3.14	2.99	2.98	3.05	3.06
1982	2.93	2.63	2.48	2.37	2.42	2.45	2.37	2.38	2.42	2.45	2.68	2.76	2.53
1983	2.60	2.54	2.76	2.90	2.96	2.95	2.77	*2.85					

* Preliminary.

Source: Grain and Feed Market News, AMS, USDA.

Table 13.--Feed-price ratios for livestock, poultry, and milk, by months, 1979-84

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average
HOG/CORN, U.S. basis 1/													
1979	14.0	15.2	15.5	14.8	15.4	13.9	11.9	11.8	13.3	15.1	15.8	15.3	14.3
1980	15.8	14.7	13.7	12.8	12.8	11.9	12.0	12.6	15.0	15.7	17.1	19.1	14.4
1981	18.4	17.7	16.3	17.1	19.8	19.8	20.1	21.8	22.4	23.1	26.6	28.5	21.0
1982	28.2	24.6	23.7	23.4	21.9	18.6	16.0	15.1	14.4	13.9	13.9	13.3	18.9
1983 2/	12.8	11.8	14.0	15.0									
BEEF-STEER/CORN, Omaha 3/													
1979	27.8	28.9	29.1	29.4	29.0	30.0	27.2	26.6	26.6	25.1	24.3	23.1	27.3
1980	21.3	19.5	19.5	19.1	19.3	19.4	20.0	20.6	21.4	21.5	23.8	26.0	21.0
1981	25.2	25.0	25.0	24.6	25.9	26.5	26.5	27.2	26.5	26.1	29.2	27.5	26.3
1982	27.7	25.1	25.2	24.5	23.4	22.7	21.9	21.8	21.2	19.6	18.1	17.8	22.4
1983 2/	18.4	18.3	19.8	21.6									
MILK/FEED, U.S. basis 4/													
1979	1.55	1.59	1.54	1.54	1.56	1.56	1.55	1.53	1.50	1.48	1.42	1.40	1.52
1980	1.43	1.40	1.39	1.39	1.39	1.41	1.39	1.35	1.36	1.40	1.43	1.48	1.40
1981	1.53	1.56	1.54	1.55	1.54	1.52	1.50	1.46	1.46	1.47	1.49	1.57	1.52
1982	1.61	1.62	1.60	1.58	1.56	1.55	1.48	1.45	1.43	1.45	1.41	1.36	1.51
1983 2/	1.39	1.36	1.35	1.34									
EGG/FEED, U.S. basis 5/													
1979	6.1	6.8	7.3	6.6	6.0	6.4	6.0	5.4	5.6	5.7	6.0	6.2	6.2
1980	5.7	6.0	6.6	5.9	5.7	5.6	5.9	5.2	5.2	5.5	5.8	6.4	5.8
1981	6.5	7.2	6.7	6.6	6.8	7.2	6.6	5.6	5.3	5.7	5.3	6.0	6.3
1982	6.3	6.3	6.0	5.7	5.8	6.2	5.8	6.1	5.9	5.7	6.1	6.0	6.0
1983 2/	6.3	6.9	7.6	8.8									
BROILER/FEED, U.S. basis 6/													
1979	2.2	2.6	2.7	2.8	2.6	2.5	2.3	2.6	2.6	3.3	3.0	2.9	2.7
1980	2.8	2.5	2.5	2.6	2.6	2.6	2.3	2.4	2.6	2.6	2.5	2.4	2.5
1981	2.4	2.4	2.3	2.6	2.6	2.6	2.5	2.6	2.7	2.6	2.4	2.6	2.5
1982	2.5	2.5	2.4	2.6	2.7	2.4	2.3	2.4	2.6	2.8	2.8	2.8	2.6
1983 2/	2.5	2.7	2.8	3.0									
TURKEY/FEED, U.S. basis 7/													
1979	3.9	4.5	4.3	3.8	3.6	3.5	3.4	3.1	3.1	3.6	3.6	3.8	3.7
1980	4.0	3.9	3.5	3.1	3.1	3.2	3.0	3.1	3.3	3.3	3.2	3.1	3.3
1981	2.8	3.1	2.9	3.0	2.9	3.0	3.0	2.9	3.2	3.4	3.4	3.8	3.1
1982	3.9	3.9	3.0	2.8	2.9	2.9	2.7	2.9	2.9	2.8	2.8	3.0	3.0
1983 2/	3.0	3.0	3.5	3.6									

1/ Number bushels of corn equal in value to 100 pounds of hog, live weight.

2/ Preliminary.

3/ Based on price of beef-steers 900-1,100 pounds, choice instead of average grade all steers previously published.

4/ Pounds of 16 percent mixed dairy feed equal in value to 1 pound whole milk.

5/ Pounds of laying feed equal in value to 1 dozen eggs.

6/ Pounds of broiler grower feed equal in value to 1 pound broiler, live weight.

7/ Pounds of turkey grower feed equal in value to 1 pound turkey, live weight.

Source: Agricultural Prices, Crop Reporting Board, USDA.

Table 14.--Price trends, selected feeds and corn products

Item	Unit	Oct.-Sept. 1982/83 1/	1983			1984	
			Sept.	Oct.	Nov.	Dec.	Jan.
WHOLESALE, MOSTLY BULK 2/							
Soybean meal, 44% solvent, Decatur	\$/ton	187	234	229	225	217	202
Soybean meal, high protein, Decatur	"	201	247	243	239	231	217
Cottonseed meal, 41% solvent, Memphis	"	177	238	220	219	214	213
Linseed meal, 34% solvent, Minneapolis	"	145	175	178	178	168	162
Peanut meal, Southeast mills	"	198	255	---	249	239	240
Meat meal, Ill. prod. pts.	"	219	240	210	240	229	232
Fishmeal, 65% protein, East Coast	"	362	415	425	424	408	393
Gluten feed, Chicago	"	118	135	141	136	136	135
Gluten meal, 60% protein, Chicago	"	251	326	309	283	275	284
Brewers' dried grains, Milwaukee	"	106	122	128	128	136	141
Distillers' dried grain, Lawrenceburg, Ky.	"	145	168	175	183	190	190
Feather meal, Arkansas Pts.	"	239	311	274	292	305	305
Wheat bran, Kansas City	"	88	110	113	122	117	116
Wheat middlings, Kansas City	"	88	110	113	122	117	116
Rice bran, f.o.b. mills, Arkansas	"	70	84	93	106	120	123
Hominy feed, Ill. pts.	"	97	121	119	122	118	114
Alfalfa meal, dehy., Kansas City	"	121	124	129	132	134	140
Cane molasses, New Orleans	"	49	69	73	73	73	73
Molasses beet pulp, Los Angeles	"	122	130	128	130	---	---
Animal fat, Ill. prod. pts.	c/lb.	13.1	15.6	14.9	15.3	15.8	17.1
Urea, 42% N., Fort Worth	\$/ton	213	225	225	225	225	225
Corn, No. 2 white, Kansas City	\$/bu.	3.35	4.35	4.97	5.37	4.72	4.60
PRICES PAID, U.S. BASIS 3/							
Soybean meal, 44%	\$/cwt.	13.58	15.70	15.80	15.80	15.60	15.60
Cottonseed meal, 41%	"	13.79	15.30	15.80	15.80	16.00	16.30
Wheat bran	"	9.80	10.00	10.20	10.30	10.60	10.70
Wheat middlings	"	9.40	9.64	9.76	9.98	10.10	10.30
Broiler grower feed	\$/ton	213	240	237	243	240	243
Laying feed	"	195	218	218	220	219	219
Turkey grower feed	"	237	264	263	264	262	257
Chick starter	"	218	248	245	250	244	246
Dairy feed, 16%	"	180	198	199	205	205	205
Beef cattle concentrate, 32-36% protein	\$/cwt.	11.87	12.90	12.80	13.20	13.40	13.90
Hog concentrate, 38-42% protein	"	15.18	17.20	16.90	17.10	16.80	16.80
Stock salt	"	6.17	6.26	6.24	6.26	6.25	6.41
CORN PRODUCTS, WHOLESALE 4/							
Corn meal, New York							
White	\$/cwt.	14.76	16.69	16.39	20.44	20.06	20.44
Yellow	"	12.73	14.69	14.43	14.29	13.63	13.50
Grits (brewers'), Chicago	"	9.84	11.79	11.53	11.42	10.83	10.55
Syrup, Chicago West	c/lb.	12.73	14.99	13.60	13.13	13.13	13.13
Sugar (dextrose), Chicago West	"	24.23	24.75	24.25	24.25	24.25	24.25
High-fructose (dried weight in tank cars), Chicago West	"	15.65	20.92	20.92	20.92	20.92	20.00
Corn starch, f.o.b. Midwest	\$/cwt.	10.71	13.07	12.56	12.56	12.90	12.69

1/ Preliminary. 2/ Grain and Feed Market News, AMS, USDA, except urea which is from Feedstuffs, Miller Publishing Co., Minneapolis, Minnesota. 3/ Agricultural Prices, ERS, USDA. 4/ Milling and Baking News, Kansas City, Missouri, except starch which is from industry sources.

Table 15.--High-protein feed: quantity fed and high-protein animal units, 1976-83 1/

Year beginning October	Quantity fed (in 44% protein soybean meal equivalent)			Total	High-protein animal units	Fed per animal unit
	Oilseed meal	Animal protein	Grain protein			
	--- 1,000 metric tons ---				Million	Pounds
1976	15,118	3,126	1,193	19,437	102.9	416
1977	17,259	3,042	982	21,283	104.5	449
1978	18,472	3,050	1,028	22,550	108.0	460
1979	20,152	3,210	689	24,051	114.6	463
1980	18,365	3,053	566	21,984	113.5	427
1981	19,123	3,080	924	23,127	110.2	463
1982	20,280	4,205	1,380	25,865	109.1	523
1983 2/	17,585	4,152	1,561	23,298	109.4	470

1/ Excludes urea and other nitrogenous compounds. 2/ Forecast.

Table 16.--Processed feeds: quantity fed, 1976-83 1/

Feed	Year beginning October							
	1976	1977	1978	1979	1980	1981	1982	1983 2/
- - -1,000 metric tons - - -								
HIGH PROTEIN								
Oilseed meal								
Soybean 3/	12,751	14,766	15,758	17,113	15,646	16,012	17,327	15,394
Cottonseed	1,412	1,780	1,534	1,641	1,395	1,728	1,636	950
Linseed	117	79	122	146	117	100	70	70
Peanut	184	92	93	108	85	114	80	80
Sunflower	---	---	180	359	40	430	302	300
Total	14,464	16,717	17,687	19,367	17,283	18,438	19,415	16,794
Animal proteins								
Tankage and meat meal	1,995	2,112	2,107	2,356	2,229	2,261	2,254	2,265
Fishmeal and solubles	375	379	462	371	344	480	410	365
Commercial dried milk products	145	178	144	144	146	150	149	150
Noncommercial milk products	172	177	140	132	137	130	131	130
Total	2,687	2,846	2,853	3,003	2,856	3,021	2,944	2,910
Grain protein feeds								
Gluten feed and meal	941	1,109	1,083	716	763	941	1,083	1,358
Brewers' dried grains	269	256	280	307	290	239	275	263
Distillers' dried grains	339	366	449	449	453	448	602	499
Total	1,549	1,731	1,812	1,472	1,506	1,628	1,960	2,120
OTHER								
Wheat millfeeds	4,351	4,508	4,484	4,400	4,638	4,578	5,058	5,109
Rice millfeeds	546	501	574	633	706	667	624	600
Dried and molasses beet pulp	1,593	1,316	1,361	1,485	1,165	1,365	1,278	1,147
Alfalfa meal	1,090	1,358	1,243	1,143	994	898	841	750
Fats and oils	656	667	630	635	630	544	509	522
Molasses, inedible	3,575	3,250	3,100	2,812	3,251	2,540	2,378	2,300
Miscellaneous byproduct feeds 4/	998	998	1,000	907	1,000	1,425	1,334	1,517
Total	12,809	12,598	12,392	12,015	12,384	12,017	12,022	11,945
Grain total	31,509	33,892	34,744	35,857	34,029	35,104	36,341	33,769

1/ Adjusted for stocks, production, foreign trade, and nonfeed uses where applicable. 2/ Forecast. 3/ Includes use in edible soy products and shipments to U.S. territories. 4/ Allowance for hominy feed, oat millfeeds, and screenings.

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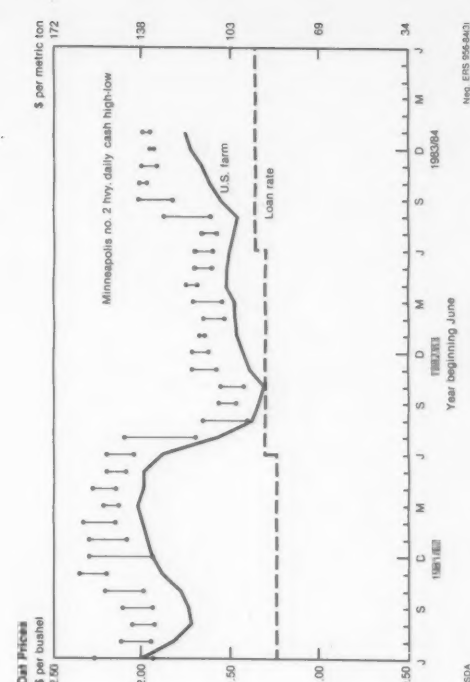
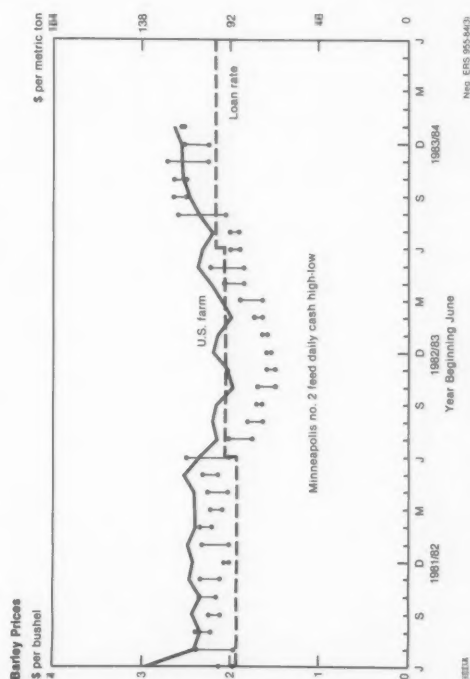
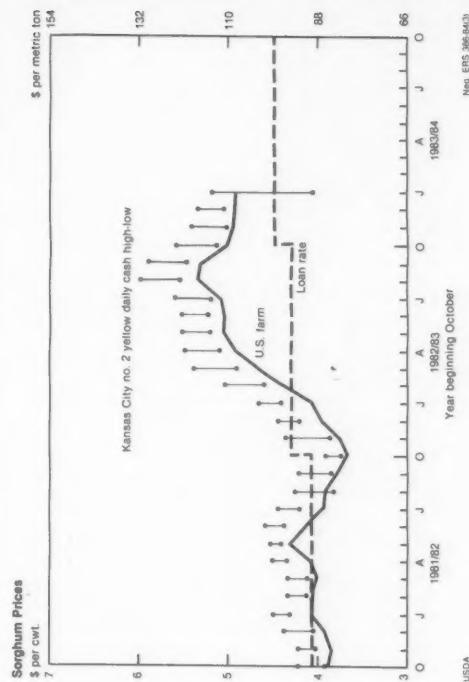
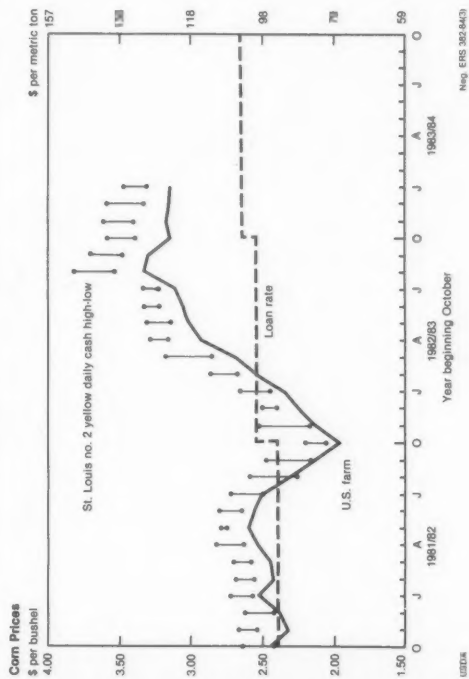
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